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FRANCISCO DE CARRIEDO Y PEREDO

By ALEXANDER E. W. SALT

(*From the College of Liberal Arts, University of the Philippines,
Manila, P. I.*)

Three plates and one text figure

By common consent Francisco de Carriedo y Peredo has been called the greatest benefactor of the city of Manila. To his foresight and benevolence the inhabitants of Manila owed for over twenty years the possession of an excellent system of water supply, which they had lacked for over three centuries, and though, with increasing demands, it has now proved inadequate and has been largely supplanted by a newer and more complete system, it still remains as a valuable asset in time of emergency.¹

While, however, Carriedo is recognized as a benefactor, the printed data as to the man himself, his charitable wisdom, and the progress of the work with which his name is associated is scanty in the extreme;² and he is commemorated only by a

¹ This was notably true during the severe drought of April and May, 1912.

² Blair and Robertson, *The Philippine Islands*. Cleveland (1907), 52, 320, has only a footnote of 12 lines copied from Vindel's *Catalogo*, and there is no mention of Carriedo in any of the current histories in English, Spanish, French, or German. The only existing monograph, *Carriedo y sus obras*. Manila (1882), by Francisco de Mas y Otzet, was written expressly for the inauguration of the water supply, and is mainly devoted to the attendant ceremonies.

fountain,³ a bridge, and a street in Manila, and by a portrait on the 26-centavo⁴ stamp (Philippine issue of 1906).⁵ It is to remedy this defect that I have carefully examined all the manuscript material, especially in the archives of the city of Manila, that might bear on the subject, and present in this paper the result of my investigations.⁶

Francisco de Carriedo y Peredo was born at Ganzo, a hamlet in the town of Torrevallega, in the Province of Santander, Spain, on November 7, 1690, and died in Manila on September 7, 1743.⁷ He came to the Philippines in 1722 in charge of the cargo of the *Santa Familia*, one of the Acapulco galleons, and thus secured the title of "general."⁸ On June 26, 1727, he married Mariana de Cosio, daughter of Toribio (Florencio) José Miguel, Marquis of Torre Campo, thirty-third governor and captain-general of the Philippines (1721-1729).⁹ His wife died childless¹⁰ less

³ The fountain bears the simple inscription (Plate I):

A CARRIEDO
MANILA
1878-1884

⁴ One centavo equals 0.5 cent United States currency; 100 centavos equal 1 peso, or 50 cents United States currency.

⁵ The portrait is taken from a bust originally in the possession of the city of Manila, which has now disappeared. A photograph of the bust is in the Bureau of Archives of the Philippine Government (Record Division). As no picture of Carriedo was extant and no account of his appearance could be found, the bust, which was selected from over twenty entered for competition, is merely a creation of artistic imagination and is not here reproduced.

⁶ At this juncture, I desire to express my obligations to the courtesy extended by the officials of the city of Manila in my work.

⁷ Ganzo is in the archdeaconry of Santillana. The extract from the church register of the parish of San Martin, Ganzo, which records his baptism, may be translated as follows: On November 20, 1690, I, Juan Gutierrez Quixano, parish priest of San Martin, Ganzo, baptized, and anointed with holy oil Francisco, legitimate son of Joseph de Carriedo and Juliana de Peredo, born on the seventh day of the same month. His godparents were his grandparents, Juan de Carriedo and Ana de Peredo of the village of Quixas, and the witnesses, Juan Gomez and Bernardo Gomez.

⁸ Audiencia y Chancilleria de las Islas Filipinas. Reales sentencias y autos definitivos. Manila (1736), 236. The sailing master, *piloto*, of a galleon bore the title of "capitan."

⁹ The archives of the Cathedral of Manila contain a record of the marriage, of which the following is a translation: On June 26, 1727, in my presence, as judge, provisor, and vicar-general of this archbishopric, were married, by pledging of troth, Doña Mariana de Cosio, spinster, of the city of Santiago, Guatemala, legitimate maiden daughter of Don Thorivio José Miguel de Cosio y Campo, Marquis of Torre Campo,

than two years after her marriage, and was buried with her mother in the church of the Jesuits, then on the southwest corner of Calle Palacio and Calle Victoria.¹¹ (Plate II.)

There is also a record of her burial in the cathedral archives as follows: Doña Maria Ana de Cosio. On March 18, 1729, the body of Doña Maria Ana de Cosio, wife of General Don Francisco Carriedo, was laid in the church of the Jesuits. She had complied with the rites of the church. Her interment was public. Fee, 10 pesos. [Signed] Don Miguel Monroy.—*Libro de entierros de Españoles* (1633-1720), 420.

Carriedo himself survived his wife over thirteen years. He died in Manila, as has been said, on September 7, 1743, and was also buried in the Jesuit church. Before his death¹² he had

knight of the order of Calatrava, and member of His Majesty's Council, governor and captain-general of the Philippine Islands, and president of its Royal Audiencia and Chancery, and of Doña Maria Ignacia de Miranda, Marchioness of Torre Campo and General Don Francisco Carriedo y Peredo. Don Miguel Enriques de Cosio and the Marchioness were witnesses. [Signed] Joseph de Ibarluzea.—*Libro de casamientos de Españoles* (August 19, 1716-June 14, 1751), 4, 97.

¹⁰ I am indebted for these extracts from the cathedral archives to the courtesy of Father Eulogio A. Sanchez, canon of the Cathedral and rector of the parish. When the waterworks were opened, La Oceania Española discovered a legitimate son of Carriedo named Lucas, an ancestor by marriage of the Count of Lizarraga, then living in Manila. Investigation in the Cathedral archives reveals no trace of his existence. Moreover, Carriedo is sufficiently explicit in a statement attached to his will. "During my marriage, no child, son or daughter, was born to me." *La Oceania Española* (July 25, 1882); *Libro de bautismos de Españoles* (Jan. 16, 1718-May 12, 1757), 4.

¹¹ In 1906, the authorities of the military Medical Supply Depot on Calle Concepcion discovered the common gravestone of Doña Mariana de Carriedo and her mother, which was being used as a footstone. When the Jesuits were expelled from the Philippines in 1769, the gravestone was removed to a cemetery on Calle Concepcion. This afterwards became the headquarters of the Spanish engineer corps. Traces of the cemetery may still be seen in the grounds of the Medical Supply Depot. The stone may now be seen in the sala of the Ateneo Municipal de Manila, a school for boys on Calle Arzobispo, conducted by the Jesuits. The inscription on the stone, which is remarkably clear-cut, may be translated as follows: Here lies Doña Mariana Cosio, daughter of the most illustrious the Marquis and Marchioness of Torre Campo, governing these Islands, and wife of General Francisco de Carriedo y Peredo. She died on March 17, 1729, being twenty-two years of age. Here also lies her mother, the most illustrious Doña Maria, Countess of Miranda, Marchioness of Torre Campo, who died on November 19, 1729.

¹² There is no trace of the exact spot where he was buried, and the committee, appointed in 1885 to dig up the floor of the ruined church of the Jesuits in the hope of discovering his remains, had to report failure. *Actas del Cabildo de Carriedo* (hereafter quoted as "*Actas de Carriedo*") (Aug. 17, 19, 1885).

served the city on the municipal board as an "alcalde ordinario,"¹³ and had amassed considerable wealth, probably from investments on the "Nao de Acapulco."¹⁴ Consequently, when his will was proved by his executors, his nephew, Manuel Antonio de Peredo,¹⁵ and the Marquis of Montecastro y Llanas Hermosa, he was found to have left over 77,000 pesos, besides personal property, reliquaries, and shares in the cargo of various galleons. He had, moreover, during his lifetime given a sum of 1,500 pesos to the Tertiary Order of Saint Francis to be invested for the benefit of the sacristy of Our Lady of Guidance, *Nuestra Señora de Guía*, in the parish church of Ermita.¹⁶ The amount left under his will included legacies to relations in Spain, to servants and dependents in Manila, and to religious organizations in the Philippines, New Spain, and the mother country, besides large bequests for masses for his soul. His native village of Torrevallega was also benefited to the extent of a stone chapel and a bridge.

¹³ The destruction of most of the records of the city of Manila during the British occupation of 1762-1764 has made it impossible to state exactly the length of his tenure of office, but we know that he was a "regidor" in 1733 and "alcalde ordinario" in 1736 and 1740.—*Audiencia de las Islas Filipinas. Reales sentencias* (1733), 169; (1736), 214, 274; *Actas del Ayuntamiento de la ciudad de Manila* (hereafter quoted as "Actas de Manila") (1739-1740), 246.

¹⁴ While the risks were heavy, the returns were proportionately large, and the position of "general," with its accompanying salary of 4,125 pesos a year and its opportunities for trade, was one of the most profitable in the Philippine service.—Martínez de Zuñiga, *Estadismo de las Islas Filipinas* (1893), 1, 268; Churchill, *Collection of Voyages* (1764), 4, 491; Morga, *Sucesos de las Islas Filipinas* (Translated into English by James A. Robertson in Blair and Robertson, *The Philippine Islands* (1904), 14, 175-195; Jagor, *Reisen in den Philippinen* (1873), 14; Bourne, *Introduction to Blair and Robertson, The Philippine Islands* (1903), 1, 62-67.

¹⁵ He was a native of Quevada, also a hamlet in the town of Torrevallega. He left for New Spain immediately after his uncle's death, but returned to Manila in 1750, and remained in Binondo until his decease in 1767. He was buried in the parish church of San Gabriel, Binondo.—*Archivos de la Audiencia de las Islas Filipinas. Registro inventario del juzgado general y privativo de los bienes de difuntos* (1767), 86.

¹⁶ *Archivos del Arzobispado. Libros de las obras pías* (1743), 2, 32. The image of Our Lady of Guidance was venerated during the Dutch invasion of 1609, and the galleons were also commended to her care. Blair and Robertson, *The Philippine Islands* (1904), 17, 277. Ermita, as its name suggests, was originally the site of a small chapel of devotion, *visita*, which was founded by seculars, but transferred by Governor Tello to the Augustinians. Buzeta, Manuel, y Bravo, Felipe, *Diccionario geográfico, estadístico, histórico de las Islas Filipinas* (1851), 2, 77.

Among his relations mentioned are his sisters, Maria Mercia Carriedo, a nun in the convent of San Andrés de Aroyo, and Juliana Antonia Carriedo y Peredo; his brother, Juan Antonio de Carriedo (deceased); his nephew, José de Castañeda y Carriedo—all living in Spain—; and his uncle, Pedro Carriedo, of Valladolid, in the Province of Michoacan, New Spain, whom he makes his residuary legatee.

To the will is attached a request that he shall be buried in the habit of a Franciscan lay brother, and certain moneys are left to be expended on clothes for prisoners and inmates of hospitals on the day of his funeral. In all, the will contains 48 clauses and a codicil.¹⁷ For our purpose, the most important clauses are numbers 34, 35, and the attached codicil. His great personal interest in the city of Manila had led him in December, 1733, to offer 14,000 pesos to the city of Manila and its merchants; and although this offer was then laid on the table it was now again repeated. The amount was to be divided into two portions of 10,000 pesos and 4,000 pesos. Both portions were to be invested, under definite conditions, by the city authorities, until they reached a specified figure, and were then to be devoted

¹⁷ An authorized copy of the will was obtained by the authorities of the city of Manila in 1764 on the motion of Regidor Andrés de Barrio, bearing the imprimatur of Ramon Orendain, executive secretary. This, however, was lost in the transference of documents to the "Junta de Consolidación de Vales Reales" in 1809 (*vide post*, p. 176), and the municipal board did not possess another copy until 1883, when, by the energy of Regidor Ramón Aenlle, another was secured from Spain, authenticated by Candido Gomez Oreña, notary public of Santillana. This is now in the city archives. The amount left by Carriedo was increased in 1774 through the recovery by his attorney, Nicolas Diaz, of a sum (not stated), the amount of which was lent on a note of hand to Captain Andrés Blanco Bermudez.—Mas y Otzet, *Carriedo y sus obras* (1882), 45-46; *Audiencia de las Filipinas. Reales sentencias* (1744), 66; Año de 1883. Candido Gomez Oreña, notario publico de Santillana. *Testimonio del poder para testar y memoria testamentaria del Exmo. Señor General Don Francisco de Carriedo y Peredo, otorgados en la Ciudad de Manila, 24 de Noviembre, 1883.*

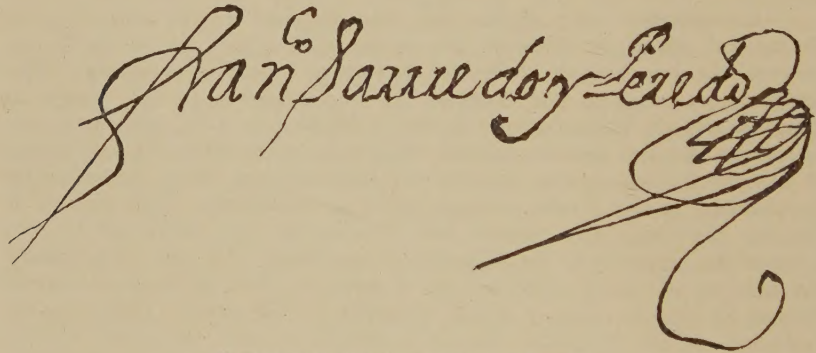
For a list of his charitable bequests in the city of Manila, one of which—to the "Santa Misericordia"—is still administered by the Franciscans, see Mas y Otzet, *Carriedo y sus obras* (1882), 38-44.

One of his tasks, that of executor to Sargento-Mayor Manuel de Miranda, involved him in a lengthy lawsuit with his sister-in-law's second husband, Captain Tomás Gomez de Angulo. In October, 1733, Angulo sued Carriedo for 2,805 pesos, 7 tomins, 6 granos (12 granos=1 tomin, 8 tomins=1 peso), the amount of his wife's dowry, and of certain sums spent from her first husband's estate during her widowhood, winning his

to their original purpose. From the larger of the investments, the citizens were to be provided with pure water; from the smaller, an industrial school for beggars was to be founded. Carriedo's plan with regard to the water supply was stated with great clearness, both in his will and in the attached codicil.

I hereby declare that in the month of December, 1733, I wrote to this city and to its merchants, offering them the sum of 10,000 pesos to carry water by means of a pipe line from San Pedro Macati, under terms and conditions laid down in the said proposal. This offer was considered by them at a meeting of the municipal board on November 5, 1734; but, after discussion, this acceptance was deferred. But since it has always been my purpose to take my part in a work that is acceptable to God, because of the great benefit that may accrue to the poor therefrom, I hereby request my executors after my death, when the value of my property has been estimated, to insist on the city and its merchants accepting 10,000 pesos, under similar conditions, which I do not wish changed or altered, excepting only that the place whence the water may most easily be carried may be changed, if it shall be found more convenient to bring water from the Maybonga River along the right bank of the Pasig to Santa Cruz, and not from San Juan del Monte. On these terms alone shall the 10,000 pesos be handed over.

The conditions are fourteen in number, and were evidently drawn in accordance with the testator's wishes by a second party,



Signature of Francisco Carriedo y Peredo.

suit on appeal to the audiencia in May of the following year. In February, 1734, he secured an additional 150 pesos which had been withheld by Carriedo from his nephews and nieces, while they were living in Parañaque. In 1737, however, he lost the guardianship of his step-children, which was transferred to their uncle. After Carriedo's death, the audiencia, on August 17, 1744, ordered 43,198 pesos, 6 tomins, 9 granos, to be paid over to Angulo from the Carriedo estate, but less than four months later, on December 2, reversed this decision, and deposited the bulk of the money in the treasury, which was in urgent need of funds.—Audiencia de las Filipinas, Reales sentencias (1732), 349-352, 520; (1733), 25-27; (1734), 252-253; (1737), 156, 194-195; (1744), 120-123, 199-202.

probably the Marquis de Montecastro, prior to the transference of the money in 1748.

(1) It was the wish of the deceased that, after 10,000 pesos had been handed over to and received by the city, it should be placed in a separate chest¹⁸ with three keys to be kept, respectively, by the "alcalde," the oldest representative of the merchants, and the oldest "regidor."¹⁹ All moneys accruing to the fund from the original amount, either by investment or loans, shall be kept entirely separate and distinct from all the municipal funds, from the rents, property, or investments, and shall be administered independently of and apart from such funds.

(2) Neither now nor hereafter shall the nucleus of this fund or its increment be touched, even for urgent or necessary cause, nor shall anything be taken from each by way of loan or aid, even in time of great need, nor shall any loan be made from it under bond or security, *except for the purpose for which it is intended*. In this event [*i. e.*, if the foregoing conditions are not complied with], the fund shall cease, and shall not continue for the purpose for which it has been left, but shall be diverted for another purpose provided for by the testator, who desires, under such circumstances, to debar the city and its merchants from the use of the said fund, and to transfer it to those who shall understand and interpret the conditions, which shall be kept, fulfilled, and exactly carried out as here stated.

(3) The city and its merchants shall decide as to the best and most convenient method of increasing the fund, either by making loans to trustworthy and creditable persons on their own bond or with proper securities, or by investment, as occasion shall offer.

(4) As the fund is increased by loans or by investments, there shall be a proportional increase of risk, in order that the fund may the more quickly reach the sum desired by the deceased.

(5) The fund shall be invested under the above conditions until it reaches the sum of 50,000 pesos, when there shall be invested or lent every year the sum of 12,000 pesos, the interest on the principal being added to the original amount.

(6) The sum of 60,000 pesos shall be always kept in the chest as a reserve to provide for any accident that may occur (which God forbid) from the loss of a vessel, or from difficulties or delay in the repayment of a loan.

¹⁸ This was called the "caja de Carriedo."

¹⁹ The municipal board, *cabildo*, at this period consisted of 2 *alcaldes* ("de primera y de segunda elección")—magistrates elected annually by the Spanish householders, *vecinos*—and 8 councillors, *regidores*; a constable, *alguacil mayor*; and a registrar, *secretario*; all of whom held office by purchase or by property right. This form of municipal government, which dates from Legaspi (June 24, 1565), was, as in the colonial cities, copied exactly from that existing in municipalities in Spain. Officially, the city authorities were known as "El muy ilustre y siempre leal Ayuntamiento de la ciudad de Manila." In judicial pleas, they were addressed as "El cabildo, justicia y regimiento." Here, however, the term used is "la ciudad y su comercio."—Martinez de Zuñiga, *Estadismo de las Islas Filipinas* (1893), 1, 358; Mallat, *Les Iles Philippines* (1846), 1, 358; Armstrong, *Charles V* (1896), 98–99; Dayot, *Cedulario de la ciudad de Manila* (1836).

(7) The water shall be carried by pipes of tile or Chinese clay along a channel made of brick, so that, even when the pipe line is injured by earthquakes, the water shall not be harmed. This channel shall commence at any place that shall be thought most convenient, providing always that the water shall not be salt.

(8) If it shall be found convenient without injury to the supply of water, there shall be built, at a certain distance one from the other along the pipe line, open reservoirs in which the water shall be purified by exposure to the sun, so that it may lose any impurities which it may have received from the pipes.

(9) The water shall be carried from the most convenient place in the neighborhood of Manila at the least possible cost, for which purpose a careful investigation shall be made as to which place provides the best water and whence it may be most conveniently carried. If it shall be found impossible to carry out the work with the interest and increment of 30,000 pesos, the sum shall be returned with the interest and property belonging to the fund, in order that the work may be done elsewhere. (Cf. Clause 2.)

(10) If the desired purpose of supplying the city with water be accomplished, three or four public fountains shall be placed in the city and in the suburbs; and, at the expense of the fund, water shall be carried to the convents of San Francisco and San Juan de Dios and to the monastery of Santa Clara.

(11) If any other convent or community house or private persons shall desire to avail themselves of the benefits of this gift, it shall be bestowed upon them under such terms and conditions as shall appear to be just; and, whatever sums they shall pay to the municipal board for this advantage, shall be applied to the fund to repair any necessary damages to the work and to pay the salary of those responsible for repairs and maintenance.

(12) If the investments made by the city shall so result that it shall be found possible to complete the work with 20,000 pesos or 24,000 pesos of money, no further investments shall be made; and all the capital and money over and above the 30,000 pesos which was designed for the establishment of the work shall remain on deposit in the hands of the city, on the understanding that, when rice is scarce and the price is high, it shall be sold to the poor at the original cost. If the amount on hand shall not be deemed enough for this purpose, it shall be increased by the city through investment, until it shall reach a sum that shall be sufficient to aid the necessitous in time of scarcity.

(13) The foregoing conditions on which rice shall be purchased shall be definite and unalterable so that, when rice is scarce, it may be purchased at a moderate cost. No attempt whatever shall be made, under any circumstances, to touch this reserve, to use it for any other purpose, or to lend it, even on the best security. In this event [*i. e.*, if the foregoing conditions are not complied with], the amount shall be returned.

(14) These conditions shall not be limited, infringed, or altered; but shall be fulfilled, carried out, and executed as expressed above.²⁰

The water supply of Manila had been a serious problem from the first year of Spanish occupation. Although the early settler was less affected than the modern resident by the impure water

²⁰ Mas y Otzet, Carriedo y sus obras (1882), 48-51.

of the Pasig River,²¹ he was not satisfied with its quality nor with that drawn from local wells, and was accustomed to have his water conveyed in cascós, either from Laguna de Bay or from old Cavite.²²

As early as 1597, Governor Tello, in a letter to King Philip II, had expressed his intention of having water conducted into the city, "as it is needed by the citizens and creoles stationed here by your Majesty. Many have died on account of the poor water." Nothing definite, however, came of Tello's suggestion; and it was due to the energy of the Dominicans, and especially of Father Juan Peguero, that the first organized attempt was made to provide at least a portion of the city with fresh water. In 1602 they opened the convent of San Juan del Monte as a house of recreation, and at once looked for and discovered a spring of water flowing from the rock. This supplied local needs until 1686, when they determined to extend the benefit of the supply to the city, and laid a pipe line to convey the water from the source to the San Juan River, 750 meters distant.²³ Hence it was carried in bancas to the wharf opposite the gate of the convent in the Walled City. This task, which was not completed until 1690, occupied from 12 to 30 men working continuously for over three years, and large sums of money were spent from the provincial funds, without a single contribution from the government treasury or from any private individual. Under this plan,²⁴ although it was effective within a limited area,

²¹ Attempts at public filtration were few and far between, although in 1833 the petty governor, *gobernadorcillo*, of the district of Tondo issued public notices (in Spanish and Tagalog), giving advice as to the proper methods.—*Actas de Manila* (833), 34.

²² For bringing water from the lake or from the Maybonga River, the casco owners charged 80 pesos a journey, or 25 pesos if the casco was not manned by his own rowers. The water for sale was conveyed through the streets in carts drawn by belled carabaos or sold from licensed bancas (native canoes) at Santa Ana and San Pedro Macati. The wealthy often brought water from springs on their haciendas if these lay near the city.—*Actas de Manila* (1844), 20; (1854), 22; (1861), 68. *Copia de una exposición de los regidores, Soler y Baden, sobre abastecimiento de aguas potables al vecindario de la ciudad de Manila* (4 de Mayo, 1861).

²³ The letter is dated in Manila, April 29, 1597, and signed: Don Francisco Tello.—*Simancas-Secular; Audiencia de Filipinas; cartas y expedientes del presidente y oidores de dicha Audiencia vistos en el Consejo, años 1583 a 1599; est. 67, caj. 6, leg. 18*. Translated in Blair and Robertson, *The Philippine Islands* (1904), 10, 41–45. For a brief life of Father Peguero, see Blair and Robertson, *The Philippine Islands* (1906), 41, 255, note 79.

²⁴ I am indebted for this information to Father Malumbres, O. P. The manuscript account of the work, written by Father Peguero himself, is in the archives of the Dominican convent.—*Reseña biográfica*, 81–82.

the suburbs were not touched, nor was water carried to the houses of private citizens, and it was to secure these advantages that Carriedo made his bequest.

The municipal board received the legacy in 1748. According to the terms of the will, they were not entitled to utilize the money at once, and, consequently, invested it in the Acapulco galleon and in ships trading to China, the Moluccas, and India. Owing to the destruction of the city archives by the British during the occupation of Manila (1762 to 1764), it is impossible to estimate the extent to which the fund increased in value during the first fourteen years of its existence. All that we know is that a considerable sum was seized when Admiral Cornish captured the city of Manila on October 6, 1762, and that, among other funds administered by the city, the Carriedo chest was also raided.²⁵ Fortunately, a nucleus was saved on the galleon *Filipino* on returning from Acapulco, amounting, in the case of the "obra pia de aguas," as one portion of the Carriedo bequest was now called, to 9,551.75 pesos, and of the "obra pia de pobres" to 2,472.37 pesos, the result of loans made in 1761 at 21.25 per cent.²⁶ The story of the salvation of these amounts is somewhat vague. Apparently, the captain of the *Filipino*, on being forewarned from Manila as to the presence of the British in Philippine waters, instead of following the usual route to Manila, abandoned his vessel, and landed his money and cargo on the northern coast of the Island of Samar,²⁷ whence it was conveyed, first, by sea to a port in Albay and, thence, overland to Bacolor in Pampanga. The total sum saved was probably large, although Ferrando's statement that, including the "situado" or annual subsidy from Mexico, it amounted to over 2,500,000 pesos is in all likelihood dictated by his partiality to Archbishop Rojo, who had accused Anda of fraud in the matter.²⁸

²⁵ At the beginning of 1764, the municipal board reported that they had no funds and no supplies, and that their records and papers were in a pitiable condition.—*Actas de Manila* (1764), 14, 63.

²⁶ The term "obra pia" as applied to these two funds was first used in 1767 by Tomás Gomez de Angulo, city attorney of Manila. Carriedo uses the term "obra" in his will in the phrase "obra de conducir las aguas de San Pedro de Macati a Manila," and elsewhere. (*Vide ante*, pp. 171, 172.)

²⁷ The actual spot has been identified as Calbayogan at the west entrance of the port of Palápag. Archbishop Rojo merely says, "at Palapa," and Anda, "at the Province of Leyte." Blair and Robertson, *The Philippine Islands* (1907), 49, 51, 113, 208, 298.

²⁸ Anda's action is, however, defended by Montero y Vidal. Montero y Vidal, *Historia de Filipinas* (1887-95), 2, 115-116; Ferrando, Juan, y Fonseca, Joaquin, *Historia de los dominicos en las Islas Filipinas* (1870), 4, 624; Blair and Robertson, *The Philippine Islands* (1906), 44, 258-259; (1907), 50, 38.

The ruse of the captain of the *Filipino* was a great disappointment to Admiral Cornish, who had fully expected to capture the vessel. Captain Parker, whom he despatched for this purpose, encountered a galleon which he boarded and took among the Naranjos Islands, south of Sorsogon, on October 30, 1762. Much to his amazement, this prize turned out not to be the *Filipino* but the *Santisima Trinidad*, which had left Manila on August 1, and had been forced to run back because of adverse winds. The English admiral was severely criticized for allowing the *Filipino* to escape in this fashion, as, when she was discovered, she was nothing but a bare hulk.²⁹

With the successful issue of the transference of the money from the Pacific Ocean to Pampanga, there are generally connected the names of Juan Valverde, a Spanish Dominican, and Francisco de San Juan, a native of Pagsanjan, in the Province of Laguna. The latter voluntarily equipped a troop of Tagalog archers who acted as an escort to Valverde, to whom was entrusted the safe delivery of the money, and on his return to Bacolor attached himself as a body servant to Anda, with whom he remained until his master's death at Imus in 1776.³⁰

The "obra pia de pobres" remained in the possession of the city until 1809. It was invested at interest until December 28, 1787, after which it was allowed to lie fallow.

In 1788 the government decided to found a hospital for the poor, which was to be called the "Hospicio de San José." As this institution came within the terms of the will of Carriedo, there was no hesitation in transferring the fund, with an additional gratuity of 2,000 pesos out of the general city chest, to the hospital committee which had been appointed on September 12, 1809, and consisted of Ventura de los Reyes (one of the Philippine representatives in the Spanish cortes from 1810 to 1812), Antonio José Fernandez, Antonio Madrigal (a member of the municipal board), and Francisco de Paula Prieto. The total amount which was actually paid over on February 16, 1810,

²⁹ Le Gentil, *op. cit.*; Blair and Robertson, *The Philippine Islands* (1903), 2, 224-225, 264-265; (1907), 49, 57-59; Montero y Vidal, *op. cit.* (1887-95), 2, 16, 17, note 2.

³⁰ There is a painting of Anda's deathbed, with Francisco de San Juan by his side, by Rafael Enriquez, dean of the College of Fine Arts, University of the Philippines. The people of Pagsanjan, encouraged by the late Antonio Maria Regidor y Jurado (a Philippine historian whose merit has not been thoroughly recognized), have always purposed to erect a monument to San Juan in his native town.

was 5,444 pesos and 70 centavos. The instigation of the payment came from the board of consolidation of exchequer bills, *junta de consolidación de vales reales*, which had called for a statement as to the condition of all charitable foundations administered within the city of Manila, and which, on May 27, 1808, discovered a considerable discrepancy between the actual sum on hand and the sum reported by the city authorities as being in their possession.³¹

The "obra pia de aguas," on the other hand, was to pass through many vicissitudes before the will of the founder was to be complied with. The first interference in the course of its regular progress came in 1767, when Joseph de Castillo and Bruno Pastor Morales, as executors of Pedro Carriedo, began to lay claim to the fund, and reached a climax in 1788, when Francisco David instituted a suit in behalf of Hemeterio Josef Bolado y Azaños, first cousin and heir-at-law of the same Pedro Carriedo, against the corporation and government of the city of Manila for the recovery of 18,000 pesos, more or less, salvage from the wreck of *Nuestra Señora de Cavadonga*, which was the combined value of the two "obras pias."³² The case was decided for the defendant in the municipal court, but on appeal to the "audiencia," the decision was twice reversed (January 22 and May 26, 1789).³³ The city, therefore, went beyond the local courts to the council of the Indies, and as a result of their favorable action received on January 2, 1792, all the books and documents bearing on the case.³⁴

The second interruption came twelve years later from the board of consolidation of exchequer bills, of which we have spoken. This board was created by a royal order on November 8, 1804, and proposed to devote all the moneys and property belonging to charitable foundations in Manila to the benefit of

³¹ Mas y Otzet, Carriedo y sus obras (1882), 57-58; Actas de Manila (1806), 272-273; (1807), 283-296; (1809), 259-261, 297-298; (1810), 23-25, 27-28, 31-33; Noticia de las obras pias y capellanias que tiene la noble ciudad de Manila (May 27, 1808).

³² Probably the legacy made by Francisco de Carriedo was the result of an investment made on the *Nuestra Señora de Cavadonga* (Cabadonga, Cabdalonga), which was captured by Anson in 1742.—Kerr, History and Collection of Voyages (1811-1817), 11, 489-501; Archivos de la Audiencia Registro inventario del juzgado general y privativo de los bienes de difuntos (1768), 92.

³³ Audiencia de las Islas Filipinas. Reales sentencias (1789), 23-24, 147-148.

³⁴ Mas y Otzet, Carriedo y sus obras (1882), 55-56.

the hospitals of San Lazaro and San Juan de Dios.³⁵ Its formation was probably inspired by the exhaustive report, issued on June 23, 1797, by Angel de la Fuente, as a member of the board of secret revenues, with regard to the Jesuit funds.³⁶ As soon as it had been regularly organized, it proceeded on November 6, 1806, to request the city authorities to hand over the capital of both "obras pias" with the corresponding papers.³⁷ For a year and a half the city, with characteristic dilatoriness,³⁸ resisted this demand, until they were finally forced to obey a peremptory order that compliance must be made within eight days, and a grudging transference was accordingly made on March 28, 1808, with meager information as to the state of the funds.³⁹ The city at once combined with the merchants' association, the four orders of friars, and the Confraternity of the Holy Pity, which was responsible for the administration of many "obras pias," and appointed José Casal and Manuel Callejas as their representatives on a deputation which laid the whole matter before the home government in Madrid. As a result of this, they were finally permitted to retain their privileges, and the money was returned on June 6, 1809.⁴⁰ These troubles, naturally, checked to a certain degree the normal increase of the fund, but when it was handed over to the board of consolidation in 1808 it amounted to 32,187.50 pesos, nearly three and one-half times as much as it had been in 1765. The total amount was made up as follows:

Item.	Pesos.
Loan to insular government	16,705.00
Loans to private individuals	3,066.81
Amount owing from estates of José Garcia and Luis Varela	4,050.92
Cash on hand	8,364.77
Total	32,187.50

All this, save the amount due from the estates, was recoverable.⁴¹

Prior to 1815, the fund was increased by loans made at interest to those who wished to trade either on the Acapulco galleon

³⁵ Actas de Manila (1807), 174. The hospital of San Lazaro was established in 1578 by the Franciscan friar, Juan Clemente. It was transferred to its present location in 1784. It was supported by a tax on stamped paper, an "encomienda," a yearly contribution from the merchants, and certain "obras pias" in its possession.

³⁶ Blair and Robertson, *The Philippine Islands* (1907), 51, 57, note 20.

³⁷ Actas de Manila (1806), 256.

³⁸ *Ibid.* (1808), 120-121, 124-128, 130-131.

³⁹ *Ibid.* (1809), 56.

⁴⁰ *Ibid.* (1811), 45-47.

⁴¹ Mas y Otzet, *Carriedo y sus obras* (1882), 57.

or on vessels to Java or the Coromandel coast of India, which were known as sea risks, *riesgos de mar*.⁴² The amount that

⁴² A contemporary manuscript, entitled: Cuenta sobre el caudal para la obra de agua. Liquidación formada de esta obra y cantidad de pesos que resulta a su favor producida de las correspondencias vencidas de las que se han dado para los riesgos de Nueva España y costa de Java: empieza en el principal y premio que se recaudaron del viaje del patache que en el año de 1761 se despacha para Acapulco y sucesivamente corrió el giro de su aumento hasta el de 1787 inclusivo con la que se dió en la Fragata San José para Acapulco, gives a list of all investments made between 1765 and 1787, and is here summarized.

Date.	Vessel.	Destination.	Debtor.	Amount loaned.			Rate of interest.
				Pesos.	Tamins.	Granos.	
							P. cent.
1765	Santa Rosa	Acapulco	City of Manila	1,139	4	0	30
1766	San Carlos	do	Alonso Herrera	4,770	0	0	30
1767	Santa Rosa	do	Ignacio Barsola	3,350	0	0	30
1767	do	do	Juan Hurrealde	1,500	0	0	30
1767	do	do	José Guevara	260	0	0	30
1768	San Carlos	do	Blas de Castrillon	2,600	0	0	30
1768	do	do	Alonso Herrera	2,600	0	0	30
1768	do	do	Francisco Barroso	1,000	0	0	30
1770	San José	do	Francisco Cortes Carrido.	3,000	0	0	30
1770	do	do	José Joaquin Martinez.	2,500	0	0	30
1772	San Carlos	do	Pedro Galarras	3,677	4	0	30
1772	do	do	Matias de Porras	3,577	4	0	30
1774	Concepcion	do	Antonio de Pacheco	8,973	6	6	30
1775	San José	do	Lorenzo Lopez de Buycoche.	1,060	1	6	30
1775	do	do	Matias Suarez	7,658	4	0	30
1777	Nuestra Señora del Rosario.	Java	Vicente Conde	4,800	0	0	12
1777	San Antonio de Padua.	Coromandel	Antonio Martinez	4,300	0	0	18
1777	Nuestra Señora del Carmen.	Java	Miguel de Memije	2,400	0	0	12
1777	San José	Acapulco	José Tamndis	4,066	6	3	25
1777	do	do	Matias Suarez	4,000	0	0	25
1777	do	do	Vicente Conde	4,000	0	0	25
1778	San Pedro	do	do	8,063	5	6	30
1779	San José	do	Ignacio Nagera	4,000	0	0	30
1779	do	do	Antonio Montenegro	4,000	0	0	30
1779	do	do	Demetrio Nazarra	3,000	0	0	30
1779	do	do	José Xavier Velarde	1,083	2	9	30
1779	do	do	Antonio Pacheco	3,000	0	0	30
1782	San Pedro	do	Manuel Camino	4,000	0	0	30
1782	do	do	Juan Verzosa	4,619	4	0	30
1782	San José	do	Antonio Conde	1,184	0	0	37
1786	San Andres	do	Manuel Conde	3,000	0	0	30
1786	do	do	Juan Portillo	3,000	0	0	30
1786	do	do	Luis Barrandegui	3,000	0	0	30
1786	do	do	José Casal	1,954	0	0	30
1787	San José	do	Juan Garcia	475	2	0	30

could be lent was determined a month before the ship sailed, and was then apportioned by the members of the municipal board among themselves, each member voting that his colleague should receive a share. The total apportionment never reached more than 12,000 pesos, and the sum allotted to each depended, primarily, on his political status, and, to a secondary degree, on his financial credit.⁴³ The rate of interest varied according to the length of the voyage and the possible danger involved in the enterprise. It was, however, lower than the current rates charged borrowers from "obras pias" administered by the religious orders, whose customary rate was 50 per cent to Acapulco, 35 per cent to India, and 25 per cent to China,⁴⁴ whereas the city exacted only 25 to 37.5 per cent on the "nao," 18 per cent to India, and 12 per cent to Java, besides deducting 3 per cent for expenses and one-eighth per cent for bringing silver from the port of disembarkation to Manila.⁴⁵ Luckily, the ships during this period fared well, and only once—by the wreck of the *San Andrés* on the Naranjos group, in 1798—was the whole investment (12,250 pesos) lost. In case the loan was not repaid at the completion of the voyage, a lien was made on the *boletas* (tickets conferring the right to ship on a "nao"),⁴⁶ unless such lien had been anticipated by previous creditors.⁴⁷ The number of bad debts thus incurred was surprisingly small. The most notable case in which a creditor who had outrun his finances escaped payment was that of José Blanco, a rice exporter by trade and a member of the municipal board, who borrowed money for investment on the *Magallanes* in 1804. In this case his *boletas* were seized by the insular government for misappropriation of funds in connection with cockpit licenses in Negros. His indebtedness finally became so large that he was given an allowance of 30 pesos a month to support his wife and family.

It may be noticed that loans were discontinued from 1782 to 1786 and that in the second voyage made in the former year an unusually high rate of interest was charged. This was due to the loss of the *San Pedro*. Besides this amount (8,619 pesos, 4 tomins) and the sum lent in 1777 for investment to Coromandel, all loans were repaid with interest on the return of the vessels to Manila.

⁴³ *Actas de Manila* (1810), 118; (1811), 47.

⁴⁴ *Ibid.* (1777), 174-178; Dias Arenas, Rafael, *Memorias historicas de Filipinas* (1850), 397; Jagor, Feodor, *Reisen in den Philippinen* (1873).

⁴⁵ *Ibid.* (1808), 28-29; (1809), 194-195; (1810), 23; (1811), 46-47.

⁴⁶ *Ibid.* (1808), 149-150, 156-157; (1809), 174-175.

⁴⁷ *Ibid.* (1814), 31. Cf. Martinez de Zuñiga, *Estadismo de las Islas Filipinas* (1893), 2, 185-186; Le Gentil, *Voyages dans les mers de l'Inde* (1779), 2, 205, 297-298; Churchill, *Collection of Voyages*, (1764), 4, 177.

He had planned to leave for China, when he was sentenced to eight years' imprisonment in Misamis and deprivation of civil rights for libeling the *audiencia*. Blanco, however, was an exception to the rule that the ordinary individual to whom money was lent generally punctually repaid both capital and interest.⁴⁸

After the suppression of the "nao,"⁴⁹ and the partial opening of Manila as a free port, marine risks were still preferred,⁵⁰ although they were intermitted while the insurgent fleets of the newly born republics were patrolling the eastern coast of southern America.⁵¹ They were still made on ships trading to Acapulco, and at the same rate of interest. Local vessels, as before, were not allowed to participate in the advantages of the fund.⁵² After 1820, the rate of interest was slightly reduced, varying from 25 to 30 per cent to New Spain, the variation depending on whether the loan was for one or two years, and from 15 to 18 per cent to India. As commerce developed, it became a not unusual practice to lend money on the cargo of a vessel trading between Manila and European ports, if the risk had been accepted at Lloyds, and bills of lading were taken as well as silver in repayment. After 1862, consequent on the depreciation of silver in South America, gold was substituted for silver.⁵³ The decision to leave the field of marine insurance and make investments only on land was not taken until 1850, and was arrived at as a result of the total loss of the barkantine *Quid Pro Quo* in 1847.⁵⁴ The possibility of land investment had been mooted as early as 1770, when a suggestion had been placed before the municipal board that it would be profitable to acquire certain lands recently vacated by the expulsion of the Jesuits. This, however, came to nothing, and it is not until 1819 that

⁴⁸ *Actas de Manila* (1806), 88-89, 147-148; (1807), *passim*; (1809), 174, 198-199, 219-220, 222-223, 300-301; *Audiencia de Manila*. *Reales sentencias* (December 2, 1809).

⁴⁹ Bourne, *Historical Introduction to Blair and Robertson, The Philippine Islands* (1903), 1, 66; *Remarks on the Philippine Islands by an Englishman*, *ibid.* (1907), 51, 149.

⁵⁰ *Actas de Manila* (1818), 228-230; (1819), 41, 63, 78-79.

⁵¹ *Ibid.* (1818), 192.

⁵² *Ibid.* (1834), 22.

⁵³ "Oro grueso Americano," *Actas de Manila* (1862), 155. In the old ledgers of the Banco Español-Filipino de Isabel II (established in 1851), the accounts are kept in ounces of gold.

⁵⁴ The last marine risk was taken on the barkantine *Mundaquez* and the frigate *Magnolia* in 1850. *Actas de Manila* (1850), 154; (1851), 82-89, 112; (1852), 29, 40-41. For the loss of the *Quid Pro Quo*, see *ibid.* (1847), 58-59.

the first chattel mortgage is recorded, and not until after 1830 does it become customary to make loans on house property and real estate. The rate of interest, which never reached more than 8 per cent, was the factor which at first retarded the common use of land loans, but sound principles of finance eventually prevailed over the attraction of large, but uncertain profits, and the determination "to keep to the land" had a very salutary effect upon the future of the fund, apart from the fact that the city acquired a considerable amount of land and houses, which it rented on a yearly lease,⁵⁵ and a half share in a theater.⁵⁶ The latter was acquired in 1853 as security for a loan to Joaquin Huett or Huit (White?), the son of Moses Huit, a citizen of the United States who was exporting rice from Manila as early as 1806. It was sold in 1859 for 7,011 pesos, 44 centavos.⁵⁷

The interest charged under the new conditions dropped again before the middle of the century. Even for small loans on poor security, it was never more than 7 per cent, while on ordinary house property 6 per cent was the current rate.⁵⁸ The largest loan was one of 30,000 pesos to Maria Some, widow of Benjamin Butler, on house property scattered all over the city, valued at 56,730 pesos and with an annual rental of 475 pesos.⁵⁹ A loan of 20,000 pesos was also made, in 1861, to Juan Esquivel, and in the following year to Aguirre and Company, the former on buildings on the Escolta, the latter on a sugar refinery worth 90,000 pesos. In this case, Matias Menchacatorre, the leading contractor in Manila, gave his personal bond.⁶⁰

After 1864, owing to Esquivel's failure, the maximum loan was fixed at 10,000 pesos.⁶¹ As had been ordained by the testator, the fund was kept in a chest, at first in the city hall, *casas consistoriales*, and then in a house of its own in San Miguel. This chest was not opened except in the presence of the members of

⁵⁵ Such houses were not always easy to dispose of if the city desired to sell. *Actas de Manila* (1845), 48; (1850), 122; *Gaceta de Manila* (Feb. 3, Sept. 5, 1875); *Oficios del Ayuntamiento de Manila* (Jan. 23, 1857); *Cuentas de Carriedo* (1857).

⁵⁶ *Cuentas de Carriedo* (1850); *Actas de Manila* (1853).

⁵⁷ In 1843 Joaquin Huett, then brigadier-general in the Spanish army, led the Spanish troops during the suppression of the revolt of the Filipino fanatic, Apolinario de la Cruz, in the Provinces of Laguna, Tayabas, and Batangas. Montero y Vidal, *op. cit.* (1895), 3, 37-55.

⁵⁸ *Actas de Manila* (1833), 26; (1835), 142-143.

⁵⁹ *Ibid.* (1857), 19; *Cuentas de Carriedo* (1857).

⁶⁰ *Actas de Manila* (1862), 173; *Cuentas de Carriedo* (1861-1862).

⁶¹ *Actas de Manila* (1864), 27.

the municipal board, the keys being kept by the chief magistrate, *alcalde de primera elección*.⁶² The accounts were presented at least every year, and, if necessary, every three months, for audit by the city treasurer,⁶³ who received 10 pesos a month from the fund and the necessary office help; namely, a clerk at 3 pesos a month for his trouble, although even this meager salary was often the subject of much heated discussion.⁶⁴ The secretary of the municipal board also received 25 pesos a month from the same source for preparing the minutes.⁶⁵

At first the accounts were included in the regular city accounts, but, after 1852, a separate account was opened, and from January 1, 1853, the board met in special session after the regular meeting as the Carriedo Chapter, *Cabildo de Carriedo*, to consider the status of the fund and of past and future loans, and to examine notes and securities. From these meetings an interested member of the board always absented himself.⁶⁶

The process of obtaining a loan was invariably the same. The applicant presented with his request his certificate of identification and, in the case of house property, a certificate of ownership and title deeds. All these documents were received by one of the *alcaldes* and passed on to the city attorney. If he approved, the property was inspected by a committee, consisting of the city engineer and the city architect, and the whole matter referred to the "*alcalde de primera elección*," who, if everything was satisfactory, instructed the city attorney to draw up the necessary papers and the treasurer to make the payment.⁶⁷

Whether the loans were on house property, storehouses with their contents, on real estate, a *premio de tierra*, or even on jewelry, of which two instances are recorded, the time was generally one year, although, at the expiration of this period, it might be extended, if the interest were paid up, for another year.⁶⁸ After two years suit was taken for recovery by law.

⁶² *Ibid.* (1818), 20.

⁶³ *Ibid.* (1867), 22. The treasurer, in connection with the Carriedo fund, is called variously "*Contador comisionado de los fondos de Carriedo*," "*Contador de propios como encargado de contabilidad de Carriedo*," "*Archivero contador de propios y de la obra pia de Carriedo*." *Actas de Manila* (1836), 59, 85; (1856), 38.

⁶⁴ *Ibid.* (1835), 37-38, 52.

⁶⁵ *Ibid.* (1851), 68.

⁶⁶ *Ibid.* (1832), 39; (1852), 14, 72.

⁶⁷ From 1838, on the advice of José Maria Jugo, an expert lawyer, all sessions were held in public. *Actas de Manila* (1838), 51-52, 80-81, 88, 97; *Expediente. Juzgado tercero de Manila* (March 11, 1865).

⁶⁸ *Actas de Manila* (1833), 27, 50-58; (1847), 78, 80.

If the request for a loan was granted, there was practically no delay in payment,⁶⁹ apart from the week which was needed for inquiries to be made as to the satisfactory nature of the loan.⁷⁰ Under ordinary circumstances, two sureties were required, who had to act in common—*en mancomun e insolidum*.⁷¹ After 1856, a loan society, entitled "La Sociedad Filipina de Fianzas," often guaranteed repayment. No loan could be recalled without interest, once it had been made, and no debtor could sell mortgaged property without the consent of the city.⁷² Refusal was based on unsatisfactory security or previous indebtedness. In the case of minors, the leave of the courts had first to be obtained.⁷³ From time to time a special review of the status of the fund, covering a period of ten years or more, was prepared by the "sindico procurador." This was termed a "coordinación," and was the subject of a special charge. He also received 5 per cent of every payment of interest up to date.⁷⁴ Apart from loans to private individuals, money was also loaned to the city—mainly for public improvement—and to the insular government, and given to the merchants of Manila through their *consulado*, or board of trade. The purposes for which the city required financial assistance were multifarious, and included such diverse objects as building the roof of the chapel in the Paco cemetery (1819), flooring the Bridge of Spain with stone, paying overdue salaries,⁷⁵ repairing the municipal blacksmith's shop on Calle San Fernando (1824), the payment of expenses incurred during the festivities in connection with the accession of Isabel II, sending deputies to Madrid (1825), building the Divisoria market (then and now the largest market in the Orient) (1851), building the Quinta market in the same year, and a new public slaughterhouse in 1872, and repairing the municipal theater in Binondo (1856) and the Ayala Bridge (1889).⁷⁶

In 1833 money borrowed from the Franciscans was also repaid from the same source.⁷⁷ On the other hand, when the Escolta was partially destroyed by the great fire of August,

⁶⁹ *Ibid.* (1832), 51, 53; (1833), 43.

⁷⁰ *Ibid.* (May 12, 1824); (1832), 33, 47-48.

⁷¹ *Ibid.* (1832), 33; (1856), 61.

⁷² *Ibid.* (1832), 12, 19.

⁷³ *Ibid.* (1833), 11, 39.

⁷⁴ *Ibid.* (1833), 40; (1836), 36; (1862), 33-34.

⁷⁵ *Ibid.* (1832), 5, 19, 25, 29; (1834), 99-100.

⁷⁶ *Ibid.* (1815), 11, 17, 31, 37, 38; (1818), 139-140; (1819), 64; (April 3, 1824); (1832), 5, 17, 39; (1834), 94; (1835), 37-38, 52; (1850), 44; (1851), 124; (1856), 38; (1872), 25-26, 95; (July 13, 1889).

⁷⁷ *Ibid.* (1833), 26.

1881, the municipal board was unable to borrow, even at 8 per cent, for reconstruction and extension.⁷⁸

The insular government first borrowed from the fund in 1786, ostensibly to buy rice. As they showed no desire to repay, the city, after waiting patiently for twenty-four years, at last, in 1810, demanded the money. This demand passed into the hands of the *tribunal de cuentas*, who put them off on the ground that they were unable to estimate the original cost of the rice, because they had not a sufficiently large staff to examine their accounts from 1785 to 1810. Finally, a partial repayment was made in 1811, and the rest returned in 1815, and with this the municipal board had to be satisfied.⁷⁹

Further loans in 1805, 1806, and 1807 brought the same results. On these occasions, the government tried to evade payment on the ground that war was impending, and it was only the energy and persistence of Gregorio Zarza Dias that prevented loss.⁸⁰ In 1836 a loan for the coinage of copper money was more satisfactory. It was repaid monthly at 6 per cent.⁸¹

Notwithstanding their willingness to utilize the money at the disposal of the city, the central government would not invest their own funds for municipal purposes, and the proposal that the city should be allowed to borrow 12,000 pesos to construct reservoirs to assist the poor, and provide water "in case of war," never passed out of the region of discussion.⁸²

The *consulado* in 1804 received 333 pesos to dispatch the frigate *Concepción*. Consequently, in 1812, they again applied for 1 per cent of the Carriedo fund to send the corvette *Fidelidad* to Acapulco to look for the *San Fernando*, which was overdue and was expected to bring authentic news as to the state of the revolution in the South American republics. The city consulted the law faculty of the University of Santo Tomás, and on their report in favor of a grant of 200 pesos, the grant was accordingly made.⁸³

⁷⁸ *Ibid.* (1881), 205.

⁷⁹ In all, 5,056 cavans had been bought at a cost of 10,481 pesos, 1 tomin. Liquidación de los 10,481 pesos, 1 tomin que se destinaron al Posito para la compra de arroz a fin de precaver los eventos y escasez de este grano, y aliviar al público en los casos que ocurran—1789. Actas de Manila (1810), 198-200; (1811), 152-156.

⁸⁰ *Ibid.* (1805), 178; (1806), 144-145; (1807), 128-131, 136, 138, 139, 140-141.

⁸¹ *Ibid.* (1836), 29, 51, 60-61, 91.

⁸² *Ibid.* (1806), 85, 101.

⁸³ *Ibid.* (1812), 131, 134, 154-163, 176.

Outside the city, loans were not made; the exception being to Manuel Provira, governor of Capiz, in 1851, on the security of pottery works at San Pedro Macati.⁸⁴

On the whole, the management of the "*obra pia*" was free from fraud or misappropriation. The exceptions occurred in 1823-24 and in 1850. In the latter year, the amount missing was comparatively small, consisting of 131 pesos and 15 centavos from the fund and 48 pesos and 90 centavos from the petty cash, *fondillo*.⁸⁵ The shortage in 1823-24 was far more serious. When the chest was opened on January 2, 1824, a deficiency of 1,576 pesos and 25 centavos was discovered. The city treasurer was at once ordered to make a thorough investigation, and reported, a week later, that the locks of the chest showed very slight signs of having been wrenched open. The senior *alcalde* immediately ordered new iron safes and transferred the keys to the treasurer in the presence of the secretary. When the matter came up for discussion, the city fathers decided that there had been no illegal attempt to open the chest, and placed the blame on the janitor of the *casas consistoriales* and his son, who were dismissed without warning on a charge of gross immorality and misconduct. To excuse themselves, the municipal board framed a letter to the governor-general, praising their own unblemished reputation, apologizing for the shortage, and offering to make it good out of the city funds with interest at 5 per cent. To this they received an answer that interest was unnecessary and that the deficit must be made up out of their own pockets. The governor's suspicions had probably been aroused by the fact that, on September 10, 1823, José Azcarraga claimed he had repaid half the annual interest on a loan, although no entry of the payment could be found in the Carriedo books.⁸⁶

On the other hand, while fraud was rare, until the opening of the ledgers, the accounts were kept, in spite of repeated complaints by the government auditor, in a careless and unbusiness-like fashion, and debts were allowed to accumulate over a long period of time which might have been secured had more impartiality been shown in prosecution.⁸⁷ When the city was called to account for this laxity, as in 1852, prosecutions were

⁸⁴ *Ibid.* (1851), 39.

⁸⁵ *Ibid.* (1851), 32, 34-35, 52-53, 62.

⁸⁶ *Ibid.* (Jan. 2, 9, 14, Mar. 10, 1824); (Sept. 10, 1825). There is no pagination in the minute-books of 1824-1825.)

⁸⁷ *Ibid.* (1851), 114; (1852), 18-20, 22, 24-25, 27, 29.

immediately instituted by the responsible official, *agente de demandas*, with great vigor, but it was often too late to regain what had been lost through previous inactivity.⁸⁸

In 1851 the first step toward investment in permanent securities was taken by the decision to purchase 63 shares in the Banco Español-Filipino de Isabel II, worth 200 pesos each. This bank had been incorporated on August 1, 1851, with a capital of 200,000 pesos in 200-peso shares from the "obras pias" of the four orders.⁸⁹

The shares were consequently bought on March 30, 1852, and remained as an asset of the fund until its absorption in 1898, paying dividends varying from 8 per cent in 1875 and 1894 to 6 per cent in 1873.⁹⁰

On February 12, 1869, on the motion of José Felipe del Pan, the municipal board also purchased 77 shares in the national bond issue of 200,000,000 *escudos* (1 *escudo* equals 50.1 cents United States currency). These shares were valued at 5,975 pesos and 20 centavos, and paid on the average 7.5 per cent dividend.⁹¹

In 1889 they were converted into 4 per cent treasury bonds at 85, bringing in 85 pesos a month.⁹²

When the Carriedo fund ceased to be primarily a loan fund, it was transferred to the insular treasury, *caja de depositos de la tesoreria general de hacienda*, where it accumulated at 8 per cent.

After this, and indeed for some years before, it had developed with great rapidity, mainly owing to the business acumen of Esteban Balbas, Baltazar Giraudier, and Joaquin Inchausti. This development is shown in the following table⁹³ which is gathered from the statement presented on the last day of each year and which included a general balance sheet, a cash state-

⁸⁸ *Ibid.* (1851), 83; (1852), 48-54; Cuentas de Carriedo (1855-1895); Actas de Carriedo (Feb. 12, March 10, 1869).

⁸⁹ Blair and Robertson, *The Philippine Islands* (1907), 52, 117; *The Philippine Census* (1903), 4, 541.

⁹⁰ Cuentas de Carriedo (1855-1895).

⁹¹ Actas de Carriedo (June 28, 1889).

⁹² Legado de Carriedo. Cuaderno diario de las cobranzas y pagos (Sept. 1, 1874-Aug. 31, 1876).

⁹³ This list is compiled partly from the Cuentas de Carriedo (1855-1895) and partly from the official list supplied by the municipal board to Francisco Mas y Otzet and published by him in *El Diario de Manila* (issue of July 24, 1882) which, however, can only be regarded as approximate.

ment, an expense account, and details as to receipts and amounts on loan.

Year.	Amount on hand.	Bad debts.	Year.	Amount on hand.	Bad debts.
	<i>Pesos.</i>	<i>Pesos.</i>		<i>Pesos.</i>	<i>Pesos.</i>
1767	9,887.62		1864	155,955.05	26,659.61
1768	11,318.00		1865	164,244.02	26,659.61
1770	12,849.62		1866	172,002.85	26,659.61
1772	14,698.25		1867	168,632.72	39,159.61
1774	24,088.52		1868	180,455.09	38,159.61
1777	24,066.77		1869	185,798.39	38,503.11
1779	28,809.62		1870	187,192.76	38,043.45
1783	35,751.64		1871	213,562.47	32,543.45
1786	36,193.14		1872	230,517.89	31,637.86
1788	39,477.14		1873	246,735.48	31,637.86
1814	36,351.55		1874	262,347.97	31,637.86
1815	40,382.52		1875	280,823.54	31,637.86
1817	40,402.52		1876	300,771.55	31,637.86
1818	41,020.27		1877	320,307.86	27,637.86
1819	41,923.27		1878	346,875.99	27,637.86
1820	47,680.56		1879	373,789.53	27,637.86
1821	48,087.12		1880	411,134.13	27,637.86
1823	48,063.25		1881	411,554.38	27,637.86
1824	51,063.25		1882	284,145.10	27,637.86
1826	59,963.25		1883	187,098.87	27,637.86
1828	46,187.25		1884	127,594.12	27,637.86
1831	61,309.75		1885	114,625.14	27,337.86
1836	89,655.76		1886	117,680.51	27,637.86
1855	106,419.56	42,806.86	1887	127,393.63	27,637.86
1856	108,713.88	41,433.10	1888	187,754.90	27,637.86
1857	114,017.11	40,740.24	1889	137,298.40	30,157.36
1858	122,627.78	37,382.11	1890	107,100.30	30,157.36
1859	129,198.32	28,382.61	1891	110,875.25	30,157.36
1860	136,649.32	26,659.61	1892	106,383.62	30,157.36
1861	140,528.93	26,659.61	1893	109,920.99	30,157.36
1862	146,340.00	26,659.61	1894	109,537.64	30,157.36
1863	157,674.03	26,659.61	1895	118,356.27	30,157.36

The decrease from 1881 was due to expenditure on the new water-supply system; the fluctuation after 1885 to receipts for the use of water and to the expense of upkeep and administration. There are no records of general receipts and expenditures subsequent to 1895. From 1889, the receipts from a tax on meat were added to the balance on hand, although they have been subtracted above.

* * * * *

We must now revert to the development of the scheme for which Carriedo expressly left his money, and consider the various plans, feasible and otherwise, which were presented to the city to "carry water by means of a pipe line * * * because of the great benefit that may accrue to the poor therefrom."

Notwithstanding the general agreement that something should be done to actualize the will of Carriedo, all the discussion of the subject produced nothing tangible, and despite several serious epidemics of cholera (notably in 1820), which the native population believed to be due to the poisoning of the water of the Pasig River by foreigners, no definite action was taken until March 7, 1841, when, in consequence of another outbreak of cholera, a royal order was issued calling for immediate action. The result was the appointment of a committee in 1843, headed by Gregorio de Borja Tarrius, whose duties were to prepare plans for bringing water from San Pedro Macati, or San Mateo, to examine the springs in the neighborhood of Manila (Malinta, Diliman, Maybonga, and San Juan del Monte were specified), and to make a careful study of the tides of Laguna de Bay in order to discover how far up the Pasig River the water was impregnated with salt.⁹⁴

As the outcome of these suggestions, an exhaustive report which had been prepared between December, 1843, and March, 1844, was ready for consideration by the municipal board within a year. Only one member, however, José Bosch, who was in constant communication with the officers of the Spanish engineer corps stationed in Manila on the matter, was anxious to take immediate action. The rest of the board, in view of the strained finances of the city, due to large sums having been spent on the reception to Governor-General Claveria and on the celebration of the majority of Queen Isabel II, expressed their interest in a scheme for the purification of the Pasig water at San Pedro Macati, as in accordance with the desire of Carriedo, but laid all the proposals on the table.⁹⁵

In 1845 and in 1853-54 the same story was repeated. In 1845, while a committee of the board composed of Juan Bautista Marcayda and Cristobal Arlegui were engaged on a project to supply the city with water by means of artesian wells, based on a new estimate of the population, the consumption of water per head, and its cost per water jar, *tinaja*, Tomás Cortes, colonel in command of the Spanish Engineer Corps stationed in Manila, was also preparing similar data, with clerical assistance from the city, with a view to running a pipe line from the San Mateo River, at a cost of 300,000 pesos.⁹⁶ His scheme, which was dated May 31, 1845, was warmly supported by José Bosch

⁹⁴ *Actas de Manila* (1843), 33, 36.

⁹⁵ *Ibid.* (1844), 23, 101.

⁹⁶ *Ibid.* (1845), 37.

and José Varela.⁹⁷ On the other hand, the committee was pledged to the filtration of the Pasig water, which Bosch opposed for several reasons, maintaining that no point could be found of a sufficient height from which to carry the filtered water into the city; that the vegetable matter and lime which impregnated the river water could not be removed; that an aqueduct over the Bridge of Spain, as suggested, was, in the condition of the bridge, not feasible; that 79,000 pesos, the amount then standing to the credit of the Carriedo fund, would not suffice for the construction of fountains or an aqueduct as had been contemplated from the outset; and, finally, that whenever Manila was exposed to war, the works could be easily destroyed. The committee, on December 12, 1845, however, gained the day, and a resolution was carried in favor of artesian wells at the cost of 30,000 pesos, provided they could be made to supply 40 *libras* (1 *libra* equals 0.1218 United States gallon) a minute to each inhabitant in Manila,⁹⁸ based on an estimate of population made by Cortes, who arrived at the following results:⁹⁹

Walled City:	
Europeans (exclusive of garrison)	3,788
Natives	2,500
Garrison	7,000
	13,288
Tondo	37,588
Binondo	58,048
Santa Cruz	19,768
Sampaloc	4,452
San Miguel	11,212
Hermita	17,680
Malate	19,292
Chinese	6,000
Transients	10,000
	218,724

Cortes had agreed to give the city 5,030,632 pints, *cuartillos*, of water a day, providing each inhabitant with 23 pints. He had also arranged to comply with the conditions laid down by the city, which were that, once work had commenced, it was to continue until its completion, although not beyond the period of a year, and that especial care should be taken to provide against earthquakes.¹⁰⁰ There is no record as to any artesian wells ever having been drilled, and the project was again shelved until 1853, when, consequent on the selection by the bureau of health of a committee of four druggists, headed by Jacobo Zobel,

⁹⁷ *Ibid.* (1845), 86, 96.

⁹⁹ *Ibid.* (1845), 96.

⁹⁸ *Ibid.* (1845), 86-89.

¹⁰⁰ *Ibid.* (1845), 39, 90-96.

to analyze the water obtained from streams and springs at Nagtahan, Mariquina, San Pedro Macati, and San Mateo, Saturnino Rilles Cristobal presented a scheme for carrying water through pipes from San Mateo to the King's Wharf in San Gabriel.¹⁰¹ This scheme, which was to cost 200,000 pesos and was to be finished within two years, was entrusted to Lieutenant-General Felipe de la Corte, of the corps of engineers, for modification, and on April 26, 1854, he was paid for his work.¹⁰² At the same time, de la Corte was forced to discard another proposition, which suggested the construction of a three-story building, each story being a reservoir, located sufficiently far from the mouth of the Pasig to prevent the intrusion of salt water. The water was to be pumped up through successive filters to the upper story, and thence carried by a pipe line to various central points in the city, carabaos being used instead of machinery to save expense.¹⁰³

Unfortunately, inactivity brought nothing out of these plans. Another decade elapsed before, mainly owing to the energy of Felix de Huerta,¹⁰⁴ the steps were taken which were eventually to lead to the realization of the long-deferred wish of Carriedo.¹⁰⁵ Huerta was ably seconded by Governor-General Moriones, although the initiative was actually taken, before the arrival of Moriones, by Governor-General Lemery. On January 29, 1862, the municipal board received an authorization from the governor to appoint an engineer to prepare two alternative projects, based on those of Cortes and de la Corte, and suggesting the name of Luciano Oliver. On March 23, 1862, a committee was at once appointed to deal with this communication, and by May of the same year Eduardo Ruiz del Arco was at work on plans.¹⁰⁶

¹⁰¹ *Ibid.* (1853), 77, 81, 95, 111. The King's Wharf is now merged with the Queen's Wharf in the Muelle de la Industria. San Gabriel is synonymous with Binondo, the parish church of which is dedicated to the archangel.

¹⁰² *Actas de Manila* (1854), 78.

¹⁰³ *Ibid.* (1853), 72-73.

¹⁰⁴ Felix de Huerta was a Franciscan friar, and at this time was in charge of the hospital of San Lazaro, Manila. In 1865 he issued a history of his order, entitled: *Estado geográfico, topográfico, estadístico, histórico-religioso de la ... provincia de S. Gregorio Magno de religiosos menores descalzos ... en las Islas Filipinas.*

¹⁰⁵ *Mas y Otzet, Carriedo y sus obras* (1882), 59-60.

¹⁰⁶ This was aided by a contribution from the Economic Association of Friends of the Country. Blair and Robertson, *The Philippine Islands* (1906), 42, 320; *Actas de Manila* (1862), 45-46, 132; *Actas de Carriedo* (July 28, 1894); *Expediente sobre el proyecto de traida de aguas a Manila* (April 8, May 6, 1862).

His assistant was at first Eugenio de Otadui, engineer in charge of roads in Bulacan, and, when Otadui was forced by sickness to return to the provinces, Jorge Ponce de Leon. Work was, however, temporarily suspended by the disastrous earthquake of 1863, and it was not until 1868 that Genaro Palacios y Guerra, who was to actualize the desire of Carriedo and serve the city in the capacity, first, of consulting and then of acting city engineer for the next seventeen years, entered upon his duties.¹⁰⁷

At the time of his appointment, Genaro Palacios was employed by the bureau of public works as head of the division of roads, canals, and bridges, and remained in its service on detail until 1878, when he became a city official on contract from the municipal board. By November, 1868, he was engaged on the preparation of plans, and in May of the next year he submitted a "proyecto" and an alternative, or "antiproyecto." The "proyecto" called for an elaborate system on the Roman plan, to cost 2,289,548 pesos and 75 centavos. It provided for the conduction of water for an estimated population of 300,000, in a rectangular stone aqueduct from a point above the town of Montalban, where a high masonry dam was to be built, to a point near the present northeast boundary of Manila. The aqueduct was to be of cross section, 1.5 meters wide by 2 meters high, and was to have a semicircular arched roof.¹⁰⁸

It was rejected by the city on the ground of expense. Palacios, little discouraged by the unfavorable reception of the original scheme, promptly expressed his willingness to carry into effect the "antiproyecto," which was to cost only 745,509 pesos and which, with certain additions and modifications, became the Carriedo system as it remained in constant use until 1908.¹⁰⁹ According to the original plans, 2 pumps of about 15,000 cubic meters combined daily capacity were to be installed at some point in the *barrio* (village) of Santolan on the Mariquina River. Here the water was to be raised into a rectangular masonry conduit excavated, for the most part, out of *adobe*¹¹⁰ formation, through two lines of 20-inch cast-iron pipe. This conduit, of external section 1.40 by 1.75 meters, was to be laid

¹⁰⁷ Mas y Otzet, *Carriedo y sus obras* (1882), 61; *Actas de Carriedo* (Dec. 23, 1868).

¹⁰⁸ Expediente económico relativo a la traida de aguas a Manila (April 8, May 6, 1862).

¹⁰⁹ Mas y Otzet, *Carriedo y sus obras* (1882), 59-60.

¹¹⁰ The Spanish term is "toba." (AS "tuff.") *Actas de Manila* (1877), 87; Mas y Otzet, *Carriedo y sus obras* (1882), 2-3, 71-76; Dieck, Robert P., *Water supply of the municipality of Manila*. Manuscript (1902), 1-4.

to a grade of 1 in 5,000 and extended a distance of approximately 4,800 meters to the reservoir (El Deposito) on the highest point of the table-land of San Juan del Monte. An inverted syphon of 26-inch cast-iron pipe, 385 meters long, was to be inserted where the line crossed a deep ravine. The reservoir was to consist of two covered basins, hewn from the same rock material as at Santolan, in catacomb form, with a combined capacity of 56,000 cubic meters (16,000,000 United States gallons) to the overflow line of 33.51 meters, city datum.

Ventilation was to be provided by 207 shafts, which were to keep the water cool and free from vegetable matter. The reservoir was to contain about one and one-half days' reserve, in wet seasons about two days' supply.

From these basins the water was to flow in a line of 26-inch cast-iron pipe along a purchased right-of-way to the city, the first branch—at the Rotonda in Sampaloc—being about 3 kilometers from the reservoir, and the distribution taking place in smaller mains, opening into 280 fire hydrants and 390 public hydrants.

It would have seemed advisable, under modern conditions, in a western country to have commenced operations at once, but dilatoriness was characteristic of the Spanish régime in the Philippines, and in this instance there was no exception to the rule. The home government did not affix its official approval to the scheme until June 10 and October 15, 1875, and work was not actually started until 1878, over nine years after Palacios had begun on the plans.

This delay was due to two causes. In the first place, there were various official channels through which the project had to pass before it was ready for execution, and, in the second place, there was considerable difficulty in determining the source from which the money for upkeep, construction, administration, and operation was to be drawn.

Every engineering detail under discussion, however small, had not only to be considered by the department of public works, but had also to be indorsed in Madrid before action could be taken by the city, and the same process had to be followed in matters of finance, except that the insular treasurer and the insular auditor took the place of the department of public works. Even when structural and financial problems had been settled, the general public had to wait a further three years for the report of the committee of ways and means before the work was inaugurated, and although the city had sought to commence

operations in July, 1872, not a spadeful of soil was turned until six years later.

The financial difficulty arose from the fact that the amount of the Carriedo fund was far short of the estimate made by Palacios. When this was considered by the municipal board, they suggested making up the deficit from the following sources:

	Pesos.
From the Carriedo fund	250,000
By public subscription	100,000
By loan from the insular government	100,000
By sale of property belonging to the city	100,000
By a tax on the skins of animals slaughtered in the <i>matadero</i> (estimated at 40,000 pesos a year) for three years	120,000
By the refund from the insular government of money expended on the support of the municipal police ("Guardia Civil Veterana"), from July, 1872, to June, 1874, which had been undertaken in accordance with the royal order of June 11, 1872	80,000
Total	750,000

Under the scheme, which was finally approved in Madrid on October 16, 1876, by the council of the Philippines, a committee of officials appointed by the ministry of foreign affairs, the expenditure was to be met from the following sources:

	Pesos.
By amount available from Carriedo fund on December 31, 1880	389,509
By a tax of 1 per cent (estimated at 64,000 pesos a year) on every pound of meat of animals killed in the <i>matadero</i> for four years	256,000
By a loan from the insular government taken from the local improvement fund	100,000
Total	745,000

This scheme was transmitted to Governor-General Malcampo on October 26 of the same year, and received by him on November 17. The conditions attached were that the Carriedo fund should not be touched till the meat tax had been exhausted, that the work should be finished in 1880, and that Palacios should not exceed his original estimate.¹¹¹

This implied that construction should commence on receipt of the authorization. As, however, the commencement was delayed until 1878, the city was enabled to dispense with any

¹¹¹ Expediente económico (1872-76), 1-9.

assistance from the insular government. This they did the more willingly as there was a general sentiment that the municipal board which had administered the Carriedo fund for so many years should undertake the sole responsibility of supplying the citizens with water.¹¹²

The other methods of securing money had been rejected for various reasons. A public subscription was objected to on the ground that the previous experiments in this direction—to erect a monument to Simon de Anda (1868), to relieve the sufferers from a typhoon in the Provinces of Laguna and Tayabas (1873), and a charity bazaar (1875)—had been comparative failures, that the burden of contribution fell ultimately not on the poor, for whom the water supply was intended, but on the rich, and that two subscription lists, for a monument to Andrés de Urdaneta and for the expenses of the recent Jolo war, had but recently been opened in Manila.¹¹³ The tax on skins met with strenuous opposition from Regidor Gonzales, who maintained that other objects, such as the reconstruction of the city hall, the tearing down of the nipa houses in the stone-material district, the widening of the approaches to the Bridge of Spain, the naming of streets and plazas, and the opening of a general cemetery, needed more immediate attention. It was eventually dropped in favor of the meat tax, because the latter would be more productive.¹¹⁴

The city property was not sold because a valuation, on September 11, 1876, disclosed the fact that it would bring only 46,960.33 pesos instead of 100,000 pesos as had been calculated. In the matter of expenditure on the municipal police, the city received back 62,296 pesos, which were diverted to other purposes.¹¹⁵

The meat tax was authorized by a royal order on November 17, 1876. Its full title was a "tax of one per cent on every pound of beef and pork cleaned in the city slaughterhouse." The tax, which was to be farmed out to the highest bidder, was advertised by public contract on February 14, 1877. The salaries of the officials who were to supervise its collection and

¹¹² The home government was in favor of such a loan, in view of the fact that the Lozada Canal in Madrid had been built in 1859 under the same conditions.

¹¹³ Expediente económico (1872), 230, 232, 239-240.

¹¹⁴ Actas de Carriedo (Sept. 25, 1875); Expediente económico (1872-76), 19.

¹¹⁵ Expediente económico (1872-76), 128, 209; Actas de Carriedo (Sept. 25, 1875); Actas de Manila (1875), 114, 166-167.

administer its profits were secured by a special appropriation. For the fiscal year 1877-78 the levy brought in 67,000 pesos in the hands of a lessee. When the contract ran out on June 30, 1878, the city became responsible for the collection and the administration of the tax, and the average profit per month was only 4,455.83 pesos. On February 1, 1879, it was again let for three years to Antonio de la Rosa for 56,273 pesos, a reduction of 18 per cent from the original amount.¹¹⁶ The arrangement continued, under various lessees, until 1890 when it was raised to a minimum of 90,960 pesos, and, although this was reduced by 10 per cent, Mariano Yu-Chioco was willing on December 4, 1892, to pay 88,003 pesos for a two years' contract. In 1894, by order of the governor-general, dated September 30 of the same year, it was increased further by 1 per cent. It was finally abolished at the close of the military occupation on August 6, 1901.

Up to July 30, 1883, the total amount spent on the works was 688,365.47 pesos, of which the meat tax had contributed 323,292.81 pesos and the Carriedo fund the remainder.¹¹⁷ This expenditure was not in accordance with the desire of the department of public works, who would have reduced the estimate to 513,664 pesos by substituting porcelain for cast-iron pipes, by using wood as fuel, by placing all the necessary clerical work in the hands of the regular office staff of the city, and by selling water from the hydrants, when the system was in operation. It was fortunate that the authorities in Madrid were vigorously opposed to the Chamorro system in which porcelain was used, even though they were in general inclined to follow the will of Carriedo.¹¹⁸

Having thus overcome all the preliminary difficulties, the board chose August 28, 1878, the birthday of King Alfonso XII, after whose queen, Mercedes, one of the public fountains was to be called, as a fitting day to inaugurate the work of construction. The attendant ceremonies were simple, but impressive. A stone was blessed by Archbishop Payot and laid by the governor-general at what was later to be the distributing point—the Rotonda in Sampaloc. Under the stone were placed in a leaden casket commemorative medals and copies of the local papers and of the act authorizing the work. In all, 4,000 pesos were spent

¹¹⁶ *Ibid.* (1877), 20-22; Expediente económico (1872-76), 210-213.

¹¹⁷ *Ibid.*; 306.

¹¹⁸ *Ibid.*, 8-19, 81.

on the celebration.¹¹⁹ Operations now commenced in earnest, and advertisements were published in the official gazette, asking for bids for construction. The contract was let in sections. The only bidder for the building of the filtration chambers at the Deposito, of the inverted siphon, and for laying the pipe line from the watershed to the Deposito and thence to the distributing point in Sampaloc was Pablo Falcon, the amounts being, respectively, 10,718.50, 3,874, 7,708, and 6,447 pesos. There had originally been another bidder for the filtration chambers, Fermin Castella, whose bid, 9,030.40 pesos, was accepted by the municipal board. When, however, it was discovered that Castella already held a contract for street cleaning, after consultation with the city attorney, it was decided to reopen the bids on July 10, 1878. On the second occasion only Falcon answered the official advertisement. The contract for the construction of the machinery building and of the sheds for coal and stores was secured on June 4 by Mariano Rivera.¹²⁰ The representative of both contractors was Antonio de Ulloa.¹²¹ All contracts were paid in monthly installments, as aliquot portions of the work were completed.¹²²

Palacios received a monthly sum for clerical help, salaries, and incidental expenses, varying from 2,000 pesos in the early months of 1878 to 20,000 pesos in March, 1882, the month before the inauguration of the new system.¹²³ His own salary was at first fixed at 6,000 pesos (March 1, 1879). Less than a year later it was raised to 9,000 pesos (October 1, 1879). His assistant engineers, Felipe Jové y Padrol and Sebastian Vara y Saez, who were his own nominees, received at first 2,600, then 3,200, and finally 4,000 pesos. There were also two foremen of works at 600 pesos each. The machinery was bought in Paris through

¹¹⁹ *Actas de Manila* (1878), 15-16, 19-20.

¹²⁰ Mas y Otzet, Carriedo y sus obras (1882), 56-68. Liquidación de las obras ejecutadas por contrata en la galería filtrante y esplanaciones para establecer el tubo ascensional de las máquinas elevatorias de abastecimiento de aguas potables a Manila (April 14, 1885); *Actas de Manila* (1878), 87-90, 100-102; (1897), 28; obras parciales del proyecto para el abastecimiento de aguas potables a Manila (Pliego de condiciones) (1878), 41-49.

¹²¹ *Actas de Manila* (1878), 108-109.

¹²² *Ibid.* (1878), 94-97.

¹²³ *Cuentas de Carriedo* (1878-83). Cf. Liquidación de obras ejecutadas en el abastecimiento de aguas potables a Manila. Memoria, planos, valoración (1885). These documents are a valuable asset for the history of Spanish engineering in the Philippines, as they give not only the wage list but also the cost of each work unit.

the agency of José de Echevarría, who was appointed purchasing agent on January 11, 1879. He received a commission of 1.5 per cent on all purchases, which were paid for through a draft on the Hongkong and Shanghai Banking Corporation for 200,000 pesos.¹²⁴ All materials from abroad were passed through the Manila custom-house free of duty.¹²⁵ The cast-iron pipes and lead were secured in Manila, partly through Frederic H. Sawyer¹²⁶ and partly through the old-established firm of Smith, Bell and Sons, who had bought out the Yengarie Sugar Company, a bankrupt concern at Mandaloyan, which had been organized in London to pipe sugar from the northern provinces (Bulacan, Laguna, and Pampanga) to the capital. New cast-iron pipe cost 33 pesos a ton delivered in Manila; the old piping from Mandaloyan 24 pesos and 80 centavos. Lead could be bought in bars for 75 pesos a ton from Mandaloyan. Sawyer also sold to the city such galvanized iron roofing as it required.¹²⁷

During the process of construction, there were no serious hindrances, possibly due to the fact that from 1868 Palacios himself lived on the ground in a small house, which came to be known, under the name of the Casa de Depositos, as a favorite resort for wealthy citizens, and personally superintended all operations. Indeed, it was owing to his unfailing energy as well as to his tact and discretion that such troubles as did occur were so trivial. An illustration of his capacity in dealing with awkward problems may be found in the matter of the purchased right of way, which, according to the conditions of the "projecto," had to be cleared for 5 meters on either side.¹²⁸ Although 50 parcels of land, valued at 9,523 pesos and 5 centavos, apart

¹²⁴ Actas de Manila (1878), 35-36, 64-65, 93; (1879), 84-88, 101-103; Expediente económico (1872-76), 182-183, 185-187; Actas de Carriedo (Nov. 22, Dec. 5, 1882).

¹²⁵ Expediente solicitando se exima del pago de derecho de Aduana todo el material que viene de Europa (1882); Actas de Manila (1885), 49, 50; Expediente económico (1872-76), 115, 142.

¹²⁶ Sawyer was an English engineer and agent for Handyside and Company of Liverpool and for the Eastern Sugar Company. He is the author of the book entitled *The Inhabitants of the Philippines*. Charles Scribners' Sons. New York (1890).

¹²⁷ Expediente económico (1872-76), 121-123, 245-289; Actas de Carriedo (Mar. 21, 1882); (June 24, Aug. 26, 1885); (Feb. 16, 1887); (June 25, 1890).

¹²⁸ *Ibid.* (Dec. 23, 1868); (Feb. 15, 1883); Actas de Manila (Aug. 6, Oct. 13, 1892); Expediente. Expropiación de terrenos para la traida de aguas. Documentos 1-5. Ramon Lopez Hermosa. Manila (1885); Oficios de la ciudad de Manila (June 11, 1878).

from such as were presented by the Augustinians and Paulists, the former being provided with free water for their house and hacienda at Mandaloyan as a *quid pro quo*, were expropriated on the personal valuation of Palacios, not a single complaint reached the municipal board.¹²⁹ Nor were operations attended by many accidents or untoward incidents. There was, indeed, one unavoidable fatality at the Deposito; there was a case of robbery involving the loss of some 600 pesos in cash; and, in 1881, two small typhoons occurred which did some damage to the pipe lines and to the roofs of the various buildings. There was also the inevitable delay due to miscalculation by the contractor as to the nature of the rock formation; but, on the whole, the work proceeded with more speed than might have been expected, and a misunderstanding which at one time presaged a dangerous outcome and was later the cause of serious friction was removed by mutual agreement. When Palacios was first appointed, it was arranged that the bureau of public works should supervise his work, while he was given a free hand as to the purchase of material by public contract. However, the extent of this supervision was not defined.¹³⁰

The first point under discussion as to whether the necessary material should be bought through Madrid, or directly by the municipal board, or in both ways was soon decided by a compromise; but when Palacios was found to have made certain purchases during the month of February, 1878, without calling for a contract, the board felt that its dignity had been injured, and consequently called him to account for his action. Palacios,¹³¹ in reply, called their attention to the procedure adopted in the case of the reconstruction of the Bridge of Spain, under which materials costing between 1,000 pesos and 5,000 pesos had been bought by contract or privately. In accordance with the authorization of the bureau of public works, materials which could be bought for less than 500 pesos had been bought privately on the sole responsibility of the engineer, and only materials above 1,000 pesos always by public contract. With the sarcastic remark that he would soon be prevented from buying even a *cavan* of lime without written permission, he expresses his will-

¹²⁹ Actas de Manila (1878), 94-95; Actas de Carriedo (Aug. 26, 1889); Expediente promovido por la Comunidad de PP. Agustinos proponiendo se concedan aguas gratuitas al convento de Manila y casa-hacienda de Mandaloyan (April 29, 1887).

¹³⁰ Actas de Carriedo (Dec. 19, 1882); (May 27, 1883); (Aug. 5, 1884); Expediente económico (1872-76), 176, 186, 199-200.

¹³¹ Actas de Manila (1878), 20, 21, 26, 28-31, 76.

ingness to resign. His firm determination not to be interfered with in trivial details, so long as larger matters were proceeding toward a conclusion, produced the desired result. As Palacios was notably honest and careful and accounted for every item of expenditure, the city authorities deprecated any intention of censure and apologized for their hasty action. During the next four years there was no further friction, and, at the inauguration of the water supply, a memorable event in the history of Manila, the vigor and skill of Palacios met with due recognition.¹³²

The actual opening of the system took place at eight o'clock on the morning of July 23, 1882, although the festivities continued without cessation from July 20 to July 24. July 23 was chosen to culminate the efforts of one hundred thirty-nine years, because it was the birthday of Maria Cristina, wife of King Alfonso XII, the then Queen-Dowager of Spain.

The program of the week was outlined by a proclamation issued by the governor-general through the official gazette, on July 18, and repeated the next day in greater detail through the same channel by Manuel Enriquez y Sequera, who was both civil governor of the Province of Manila and chairman of the municipal board,¹³³ *corregidor*. The program, as carried out, was in brief as follows:¹³⁴

Monday, July 20.—Music and athletics in the suburbs and on the Paseo de Magallanes for prizes offered by the municipal board. Eight p. m., reception at Fort Santiago.

Tuesday, July 21.—Music and athletics as on Monday. Opening of the Monte de Piedad.

Wednesday, July 22.—Massed bands on the Luneta.¹³⁵ Fireworks on Bagumbayan field. Illumination and decoration of the Luneta ballroom.

Thursday, July 23.—Five a. m., massed bands. Six a. m., civic procession leaves the city hall for Sampaloc. Eight a. m., opening of the Carriedo fountain accompanied by a distribution of tokens and small coins. In the afternoon, horse racing on the Bagumbayan field. In the evening, free theatrical performances in the various theaters, and a grand invitation ball in the Theater of Varieties.

Friday, July 24.—As on Thursday.

The civic procession on Thursday consisted of thirteen official carriages, and was accompanied by allegorical floats, the most

¹³² He was recommended for the Grand Cross of Isabel II, and was presented with the freedom of the city, an honor which he shared with Father Faura, the eminent Jesuit seismologist. *Actas de Manila* (Jan. 12, 1878), 81–85, 93; (1882), 105.

¹³³ *Gaceta de Manila* (July 18–19, 1882).

¹³⁴ Mas y Otzet, *Carriedo y sus obras* (1882), 93–102, 106–108.

¹³⁵ *Ibid.*, 118. The program of the massed bands and of the ball on July 23 is given in *El Diario de Manila* of the same date.

noticeable being those of the mestizo corporation of Santa Cruz, carrying a bust of Carriedo crowned with laurel; of the officials of Tondo, with a fountain from which flowed wine and water; and of the Chinese citizens of Manila, representing a sampan, and manned by Chinese children.¹³⁶ Before the opening ceremony, mass was celebrated opposite the fountain in a temporary structure erected by the house of Lorenzo Rocha who also entertained the officials at luncheon after the proceedings.¹³⁷ In addition to the bronze and silver medals, which the national mint was permitted to coin for two months, two gold medals were also struck, one of which was laid under a commemorative stone, while the other was presented to the Conde de Peracolls as the head of the Carriedo family.¹³⁸ The invitation ball was given in the Theater of Varieties on Calle Arroceros, and the Italian Opera Company, from whom it was taken for the night, was reimbursed by being excused the rent of the building for ten nights. During the whole celebration, the streets were decorated by day and illumined by night.¹³⁹ There were decorative arches on the south side of the Bridge of Spain, and of the Santa Cruz and Carriedo Bridges, and on Plaza Goiti.

Alms were distributed in commemoration of the event to the hospitals, the prisons, and the poor;¹⁴⁰ a degree was conferred in every department of the university; money was given to every parish priest within the municipal radius for a mass for the soul of Carriedo; and every child born or person married within the week received a liberal present,¹⁴¹ thirty-seven couples and parents of eleven children availing themselves of this latter offer.¹⁴² In addition, two of the local newspapers, *El Diario*

¹³⁶ Mas y Otzet, *Carriedo y sus obras* (1882), 107. The whole description by Mas y Otzet, who was the official historiographer, is very vivid.

¹³⁷ *Actas de Carriedo* (July 23, 1882). *Invitaciones. Traida de aguas. Inauguración de la primera fuente* (1882).

¹³⁸ The medals had on the obverse the words "Reinando Alfonso XII. Commemoración de la traída de aguas potables. 24 de Julio, 1882," and on the reverse "Gobernando Filipinas el General Marques de Estella. Carriedo y el Municipio de Manila."—*El Comercio de Manila* (July 30, 1882); Mas y Otzet, *Carriedo y sus obras* (1882), 118; *Actas de Carriedo* (Nov. 12, 1884); *Actas de Manila* (1882), 104.

¹³⁹ *Ibid.* (1882), 93-96, 97. The chairman of the entertainment committee throughout the celebration was Francisco de Paula Rodoreda, whose widow is still resident in Manila.

¹⁴⁰ Mas y Otzet, *Carriedo y sus obras* (1882), 102-103.

¹⁴¹ *Ibid.*, 127-129.

¹⁴² *Actas de Manila* (1884), 191.

and El Comercio, gave special essay and deportment prizes to the children in the schools.¹⁴³

On August 8, the final touch was given to the ceremonies by a solemn requiem mass in the cathedral, at which the sermon was preached by Francisco Sanchez y Luna.¹⁴⁴

The permanent memorials were a stone in the City Hall and the Carriedo fountain. The proposal for a monument fell through, ostensibly owing to disagreement as to the site, actually because of general unwillingness to be taxed for the purpose, especially as the total cost of the celebration had already exceeded the original estimate of 16,000 pesos by 3,630.75 pesos, notwithstanding the fact that all the wood had been supplied by Mariano Ocampo.¹⁴⁵

Fortunately, the opening of the system anticipated and, in some measure, alleviated the cholera epidemic which broke out during the next month, and raged with great intensity in the early part of 1883, as water, more or less fresh, could now be obtained from the public hydrants. The regulations for private service were not drawn up until a later date. Palacios was at work on them in 1884, but they were not passed by the municipal board until December 4, or printed until 1885, and even at the latter date the necessary material for house connections had not arrived from Europe, and had to be provided by the concessionnaires.¹⁴⁶ The regulations of 1885 differed in this respect from those of 1899, and were also affected by the existence, at first, of two methods of supply, either by a pipe giving a uniform amount every twenty-four hours, or by a meter, instead of by the general meter service adopted under the direction of William D. Conner, first lieutenant, Corps of Engineers, U. S. A., the first American engineer in charge of sewers and water supply.¹⁴⁷

In 1912 the Division of Sewers and Waterworks Construction was separated from the Department of Engineering and Public Works, and is now administered as a separate department. During the Spanish régime, considerably more license was

¹⁴³ *Actas de Carriedo* (March 8, March 11, Dec. 6, 1888); *Actas de Manila* (1878), 65.

¹⁴⁴ *Ibid.* (1882), 104-106; *Actas de Carriedo* (April 15, July 29, 1885).

¹⁴⁵ *Ibid.* (Feb. 6, 1883).

¹⁴⁶ *Ibid.* (April 19, April 29, Oct. 24, 1884); *Gaceta de Manila* (Nov. 12, 1884); *Actas de Manila* (1884), 191. In 1886, a complaint was raised that too much attention was being paid to private service.

¹⁴⁷ Regulations for the public and private services of the Carriedo waterworks of the city of Manila (1889).—Reglamentos para el uso público, gratuito y a domicilio privado, mediante distribución de las aguas potables del canal de Carriedo. Manila (1885).

granted under the terms of contracts made with house owners than now, although defaulters in payment were treated with like severity. The price of water (about 4 centavos of the present coinage a cubic meter), with a reduction for a larger quantity, was slightly less (the price is now 5 centavos), although the Spaniards had a curious arrangement under which it was estimated that each day a native servant would use 25 liters, a member of the family or a European 50, a horse 80, while 40 liters were allowed for a 2- or 4-wheeled carriage, and 2 liters for each square foot of garden. The meter used was called the Kennedy meter, and was purchased from Tylor and Sons, of Loughborough, England.¹⁴⁸

The two pumps were in position on October 1, 1883, and the first test was made after they had been at work for over a year in November, 1884. Under this test, one of the pumps was kept continuously at work for twenty-four hours, the other for seventy-two hours, with from 16 to 22 revolutions a minute, and a pressure of 54 to 60 pounds to the square inch.¹⁴⁹ The coal used not only for this test, but also on other occasions, always came from South Wales (Cardiff) or Australia. Native (Cebu) or Japanese coal was always declared to be expensive or too wasteful.¹⁵⁰

An experiment with the Japanese coal brought from the Rana-loza colliery showed that, although it was 3.3 per cent cheaper than Australian coal, 10 per cent more was consumed, and it was also more moist and dirty, and produced more ash.¹⁵¹

The price of coal, which was bought by public contract in lots of from 200 tons upward, varied from 10.78 pesos to 15 pesos a ton, with an extra peso for haulage to the Deposito.¹⁵²

The cost of upkeep, as originally calculated by Palacios, was 58,113 pesos, and the expenditure kept within the estimate, although the appropriation did not allow for any extensive developments. In 1885, a radical change was made in the arrangement by the resignation of Palacios, owing to friction with the author-

¹⁴⁸ Cartas del Corregimiento de Manila (Nov. 20, 1885); Expediente económico (1872-76), 267-270.

¹⁴⁹ Actas de recepción de las máquinas elevatorias (1883); Appendix (Nov. 7, 1884).

¹⁵⁰ Actas de Carriedo (Dec. 27, 1895).

¹⁵¹ *Ibid.* (Sept. 21, Dec. 6, 1888).

¹⁵² For the current prices in various years, cf. Actas de Carriedo (April 15, 1884); (Nov. 17, 26, 1886); (March 20, 1888), (April 7, 1889); (Feb. 21, 1890); (Feb. 25, 1892); (Jan. 11, 1893); (May 24, 1895); (Feb. 11, 1896); and (April 11, 1897).

ities on the question of salary. As has been stated, there had been some disagreement on the subject of contracts, but this had been smoothed over, and, although he and the municipal board were not always at one as to the location of fountains and the direction of the pipe line, these were matters of detail which were soon adjusted. The immediate cause of his resignation was his refusal, in which he was joined by his assistants, to pay the government tax of 10 per cent of all salaries of officials over 100 pesos a month, which had been ordered on November 18, 1878. Palacios was not averse to accept the deduction, provided that it only affected his salary as an official of the bureau of public works, but definitely refused to allow his salary as city engineer to be touched. The city would not adopt the suggestion of the insular auditor that his salary might be proportionately increased to meet the deduction, considering that he was already being paid enough, so he sent in his resignation on March 24, to take effect on April 30, 1885. It was accepted by the board, who tendered him their thanks for his valuable services, although somewhat curtly, and allowed him his passage money and expenses to Spain.¹⁵³

His position was temporarily filled by the city architect, Juan José de las Hervas, who was given 3,000 pesos for the additional work, with an assistant at 2,000 pesos.¹⁵⁴ In 1887 Hervas was succeeded by Manuel Ramirez y Bazan from the bureau of public works at 5,000 pesos a year.¹⁵⁵

Despite the resignation of Palacios, the system continued to run fairly smoothly, although certain small difficulties would probably have been lessened, if not entirely removed, by his presence. He could not, indeed, have anticipated the disastrous effect of typhoons, which on two occasions wrought considerable damage,¹⁵⁶ or even avoided scarcity of water, which in 1895 was the source of bitter complaint.¹⁵⁷ But he would probably have guarded more closely against the possibility of accidental¹⁵⁸ or

¹⁵³ *Ibid.* (Feb. 15, March 1, Sept. 28, 1883); (Feb. 6, 1884); (Jan. 20, 1886); (April 16, 1887); *Actas de Manila* (1882), 165-166, 177-178; *Expediente. Traida de aguas potables a Manila. Administración facultativa* (1885), 394.

¹⁵⁴ *Actas de Carriedo* (March 2, 1887).

¹⁵⁵ *Ibid.* (Feb. 15, March 1, Sept. 23, 1883); (Feb. 6, 18, 1884); (Jan. 20, 1886); (April 16, 1887); *Actas de Manila* (1882), 165-166, 177-178; *Expediente. Traida de aguas potables a Manila. Administración facultativa* (1885), 394.

¹⁵⁶ *Actas de Carriedo* (March 2, 1887).

¹⁵⁷ *Ibid.* (July 7, 1895).

¹⁵⁸ *Ibid.* (Nov. 4, 1884); (Sept., 1892).

forced leakage,¹⁵⁹ and would have established a filtration plant at the Deposito to prevent impurities in the water.¹⁶⁰ Moreover, he would have taken keen interest in the carrying out of his original plan for fighting fire. A small fire brigade was operating by January, 1885, as soon as the first fire hydrants had been installed. The first hydrants were procured from the Dominicans at 10.25 pesos apiece,¹⁶¹ while the second supply of one hundred was bought by contract from Wilks and Company at 8.50 pesos each, the cost of private installation being fixed at 1 peso. The first fire that the new fire brigade was called to was in the nipa barrio of Santiago (San Fernando de Dilao) in January, 1885, and another was successfully attacked in Tondo in the following month.¹⁶²

To Palacios also was due the project for the organization of the waterworks' employees into a special corps, entitled the "cuerpo de fontaneros," who at a later date were given permission to carry arms,¹⁶³ and the arrangement for proper hospital service in case of injury or sickness. It is almost impossible to estimate the benefit conferred upon the city by Palacios. If Carriedo deserves commemoration as the originator of the system, Palacios deserves equal honor as the man who despite many difficulties made the system an actuality.¹⁶⁴

By the will of Carriedo, a gratuitous supply of water had been promised to definite institutions, but this permission was largely extended, the only condition being that the institutions should be of public benefit, *establecimientos de beneficencia*.¹⁶⁵ In all, more than 50 applications were received, although only 32 were considered with favor. Among those who were unsuccessful

¹⁵⁹ *Ibid.* (Aug. 15, 1885). In February, 1887, the natives of San Juan del Monte were discovered tapping the main pipe. *Ibid.* (Feb. 4, 1887).

¹⁶⁰ In June, 1885, the assistant engineer answered a series of complaints with the assurance that river water was always dirty, and that all filtration should take place at home. *Ibid.* (June 1, 1885); (Aug. 27, 1890); (Aug. 25, 1893).

¹⁶¹ *Ibid.* (March 27, 1886); (March 1, 1887); Expediente sobre contratación de las 100 bocas de incendio (1885).

¹⁶² *Ibid.* (Jan. 22, Feb. 28, 1885).

¹⁶³ The actual appointments to the "cuerpo" were not made until April 5, 1887, although the appropriation was passed on September 21, 1886. Expediente para la creación de doce plazas de peones fontaneros y dos capacitaciones. Incidente relativo al personal de la traida de aguas que necesitan licencias para traer armas (1894); Actas de Manila (1885), 58-60.

¹⁶⁴ Major T. F. Case when City Engineer of Manila, paid a well-merited tribute to his remarkable care and accuracy. Annual Report. Municipal Board. City of Manila (1903), 58-59.

¹⁶⁵ Actas de Carriedo (July 11, 1889).

were the authorities of the colleges of Santa Isabel and Santa Rosa and of the school of San Carlos, the military authorities at Fort Santiago, the officers of the Jolo regiment in the Luneta barracks and those stationed in the Malate and artillery barracks, the military hospital, the captain of the port, and Francisco Godinez, whose houses—6–8 Calle Real, Intramuros—had been occupied by the municipal board while the city hall was being repaired.¹⁶⁶ The excessive number of free beneficiaries was the subject of a complaint in 1892, and, although a committee was appointed to inquire into the matter, in 1894 Gumersindo del Valle was still voicing the objections. The present number, nine, is in exact conformity with the expressed terms of the will, with such additions as have been rendered necessary by concessions made during the period of construction.¹⁶⁷

Del Valle's action was also prompted by the increasing exhaustion of the Carriedo fund and the inadequacy of the appropriation to meet expenditure, mainly owing to the growing cost of administration, which swallowed up the meat tax in its entirety.¹⁶⁸ The minimum appropriation was originally fixed by Palacios at 58,113 pesos, divided in the following proportion: Twenty-one thousand, five hundred seventeen pesos for distribution and service, 22,596 pesos for office help and police, and 14,000 pesos for upkeep and repairs. Before this amount passed the municipal board in 1884, an attempt was made to reduce it to 54,313.10 pesos, by a committee composed of Mariano Bertolucci and Jacobo Zobel. This, however, fell through, and until 1897 the original estimate was duly passed each year.¹⁶⁹ As a matter of fact, the average expense was considerably below this sum. Del Valle's calculations, which were based not on the official figures but on personal investigations, show that up to June 30, 1894, the total amount spent had been 1,025,940 pesos. Of this, he claims that 544,315 pesos had been spent on construction, and 480,652 pesos on running the system. Unfortunately, he assumed that the work on construction ceased automatically when the Carriedo fountain was opened, whereas there was a

¹⁶⁶ *Ibid.* (May 26, Aug. 18, 1886); (May 5, Sept. 14, Oct. 24, 1888); (Jan. 15, July 11, Oct. 24, 1889); (Aug. 4, 11, 1892).

¹⁶⁷ *Ibid.* (Sept. 22, 1892); (Feb. 5, 1894).

¹⁶⁸ Del Valle believed that a portion, at least, of the meat tax should be devoted to the improvement of the city markets. *Actas de Carriedo* (Sept. 22, 1894).

¹⁶⁹ *Copia del expediente de los presupuestos de las obras de abastecimiento de aguas potables a Manila para conservar dichas obras. . .* (March 26, 1884); *Expediente económico* (1872–76), 774; *Actas de Carriedo* (Nov. 20, 1883).

considerable sum spent in this direction even after July 24, 1882. Allowing, however, for the general correctness of his figures as regards expenditure which can be authenticated from the account books of the fund and of the meat tax, we may draw up the following balance sheets:

Carriedo fund, June 30, 1894.

	Pesos.		Pesos.
To interest on Carriedo fund prior to January 1, 1882	63,482.72	Expenditure from fund during period of construction	253,406.00
Carriedo fund in hand, January 1, 1882	411,554.38	Expenditure, July 24, 1882, to June 30, 1894	192,780.00
Interest on fund January 1, 1882, to June 30, 1894	98,204.90	Balance on hand, June 30, 1894	^a 127,056.00
	573,242.00		573,242.00

Meat tax, June 30, 1894.

	Pesos.		Pesos.
Receipts, May 1, 1877, to June 30, 1894	681,953.00	Expenditure during period of construction	290,909.00
		Expenditure, July 24, 1882, to June 30, 1904	285,845.00
		Balance on hand, June 30, 1894	105,199.00
	681,953.00		681,953.00

(c) Combined funds.

	Pesos.		Pesos.
Receipts from Carriedo fund	573,242.00	Expenditure during period of construction	544,315.00
Receipts from meat tax	681,953.00	Expenditure, July 24, 1882, to June 30, 1904	478,625.00
		Balance on hand, June 30, 1904	232,255.00
	1,255,195.00		^b 1,255,195.00

The majority of the board were at one with Del Valle as to the necessity of economy, although pumps and a new deposito

^a This amount was on deposit in the Banco Español-Filipino, and consisted of 114,456 pesos in cash and recoverable notes and 12,600 pesos in bank stock. Twenty-five thousand three hundred three pesos worth of bad debts ("creditos incobrables") have been omitted as an asset.

^b Cuentas de Carriedo, passim.

were urgently needed, and the aqueduct required enlargement. It was determined, consequently, to use well and river water for street sprinkling,¹⁷⁰ and, by a process of consolidation, to reduce the cost of management.¹⁷¹ The failure of the concern to pay its way was undoubtedly due to poor business management and the long-existent dislike of the city officials to subject their accounts to audit.¹⁷²

Between 1895 and 1897, the troubles due to the insurrectionary movement and the lack of available funds seriously affected the work of distribution. The enlargement of reservoirs by the construction of a new deposito, at a cost of 170,000 pesos to hold 40,000 cubic meters, was proposed and agreed to, but never carried out.¹⁷³ Two more pumps were procured through the agency of the colonial office from Mirlees, Watson, and Jardine of Glasgow, who had installed the original engines, but were not set up until after the arrival of the American forces in 1898,¹⁷⁴ and work on the aqueducts was suspended by the events of the same year.¹⁷⁵ The growth in consumption, which was 1,000,000 meters in 1886 and 3,500,000 meters in 1902, called for these developments, and the city declared its intention of finding a new source of supply and establishing

¹⁷⁰ *Ibid.* (July 24, 1894). Cf. *Ibid.* (April 25, 1889); Expediente sobre establecimiento del riego en los paseos y calzadas de esta capital con agua del canal de Carriedo (Sept. 21, 1886).

¹⁷¹ Actas de Carriedo (Jan. 23, 1895).

¹⁷² *Ibid.* (June 15, 1892). Cf. Incidente promovido por el tribunal de cuentas pidiendo se presenten las cuentas de los fondos de la obra pia de Carriedo. (A series of letters from June 22, 1871, to August 30, 1876.) Incidente promovido por la Tesorería General de Cuentas (1876). A statement of the accounts for 1855 was not secured until January 2, 1874.

¹⁷³ Actas de Carriedo (Oct. 20, 1893).

¹⁷⁴ Dieck, R. P., Water supply of the city of Manila (manuscript), 4; Actas de Carriedo (Oct. 17, 1892); (Aug. 14, 1886); Presupuesto de las obras que se necesitan ejecutar en Santolan (Nov. 10, 1898).

¹⁷⁵ Documentos de varias obras de ampliacion de Acueducto de Carriedo. (The contract was let on June 22, 1896, to Francisco Martinez for 39,970.50 pesos. Work was commenced on February 28, 1897, and was to be finished by August 28, 1898.) The Spanish authorities did not pay the liabilities incurred in these improvements, nor their coal bill, and by the decision of the Supreme Court of the United States that the *city of Manila as constituted in 1910 is liable for the obligations of the city incurred prior to the cession of the Philippines to the United States*, the balance of the Carriedo fund, consisting, when the functions of the Spanish "Ayuntamiento" were taken over on August 13, 1898, of 18,000 pesos in securities, was absorbed. *Esperanza Trigas Otero et al. v. City of Manila. Ricardo Aguado v. City of Manila. Cf. U. S. Supreme Court. October term (1910), No. 207; Acts of the Philippine Commission (1901), chl. 68-75; Philippine Reports (1903-1912), 9, 513-526, Cases 3282, 3449, 3558, 3703.*

a new system as soon as it was possible. Work was consequently commenced in 1903, and the new system opened on November 12, 1908. Water is now brought from an almost virgin watershed of 100 square miles in area, whence it is carried to a storage reservoir at Montalban capable of holding 210 million gallons (United States measurement), and thence to two distributing reservoirs at San Juan del Monte, one of which, 90 feet (about 27 meters) above sea level, can hold 18 million and the other, at 111 feet (about 35 meters), 54 million gallons.

This system is only barely adequate to the new demands of the city of Manila, and the remarkable increase in the water service will be shown by the following comparison from a private memorandum dated April 20, 1887, and from a calculation based on the service of the year 1910-11.¹⁷⁶

Date.	Length of pipe line.	Public hydrants.	Public fountains.	Hydrants for fire and street sprinkling.	Services in operation—	
					Free.	By payment.
	<i>Meters.</i>					
1887	58,361.45	408	11	752	a13	b82
1912	176,062.89	219	18	618	9	5,722

^a In 1892 this had increased to 32.

^b In 1895 this had increased to over 800. *Actas de Carriedo*, May 24, 1895.

That the American occupation has resulted in the acquisition by Manila of a modern system of water supply which would do credit to the most progressive twentieth century city does not in any way detract from the forethought and wisdom of Carriedo, who may still be called the greatest benefactor of the city of Manila.

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¹⁷⁶ I am indebted for this calculation to the courtesy of Mr. Abraham Gideon, Chief of the Department of Sewers and Waterworks Construction, Manila.

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ILLUSTRATIONS

PLATE I

Carriedo fountain.

PLATE II

Common gravestone of Doña Mariana de Carriedo and her mother.

PLATE III

Plan of Manila drawn under the direction of Genaro Palacios (1875).

TEXT FIGURE

Signature of Francisco de Carriedo y Peredo.

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213



PLATE I. CARRIEDO FOUNTAIN.



PLATE II. COMMON GRAVESTONE OF DOÑA MARIANA DE CARRIEDO AND HER MOTHER.



PLATE III. PLAN OF MANILA DRAWN UNDER THE DIRECTION OF GENARO PALACIOS (1875).

ÜBER CHRYSOMELIDEN UND COCCINELLIDEN DER
PHILIPPINEN: II. TEIL ¹
(COLEOPTERA)

Von J. WEISE
(Berlin, Niederschönhausen, Germany)

CHRYSOMELIDÆ

1. *Lema torulosa* Lac., Mon. Phytoph., Mem. Liège (1845), 3, 345.

Nach einem Exemplare ohne Fühler beschrieben, wurde von Herrn Ribbe bei Manila gefangen. Die Fühler sind länger als der halbe Körper, mässig schlank, schwarz, Glied 1 rotgelb. Beim ♂ ist der Vorderrand des Thorax in der Mitte zweimal leicht ausgebuchtet, dahinter liegen 3 vorn vereinte Gruben; die mittlere ist ziemlich gross, viereckig, die seitlichen haben die Form einer breiten Schrägfurche. Der grösste Teil des Kopfschildes ist schwarz.

TICAO ISLAND (6540, R. C. McGregor).

2. *Aspidolopha semperi* Lef., Ann. Soc. Ent. Fr. (1886), 192.

Thorax einfarbig rotgelb, mit 4 wenig gesättigt gefärbten, schlecht bemerkbaren Makeln in einer Querreihe in der Mitte. Auf den Flügendecken ist ein kleiner runder Fleck auf der Schulterbeule, und hinter der Mitte eine Quermakel schwarz. Diese hat zackige Ränder, tritt nahe an die Naht heran, bleibt aber vom Seitenrande weit entfernt. Sie ist innen mässig breit und verschmälert sich nach aussen.

LUZON, Mt. Arayat, Pampanga (2978, W. Williamson).

Diese Art ist eine typische *Aspidolopha*, und es lässt sich daher nicht entschuldigen, dass der Verfasser einer Clytriden-Monographie sie zur Gattung *Clytra* stellte. Die *Clytra philippinensis* Lef., loc. cit. 191, gehört nach der Beschreibung ebenfalls zu *Aspidolopha*, und die Frage, ob *A. manilensis* Ws., Deutsche Ent. Zeitschr. (1900), 448, nur eine dunkler gefärbte und feiner punktierte Form davon, oder eine gute Art ist, bleibt weiterer Beobachtung vorbehalten.

¹ Nebst Bemerkungen und Neubeschreibungen von 2 Borneo- und 4 Java-Arten.

3. *Gynandrophthalma impieta* sp. nov.

Dilute lutea, subtus pubescens, supra nitidissima, obsolete punctulata, antennis apicem versus infuscatis, articulo tertio minutissimo.

Long. 3.8–4.8 mm.

MINDANAO, Zamboanga (*T. C. Zschokke*).

Type, No. 13641, in der Entomologischen Sammlung des Bureau of Science, Manila.

Blass bräunlich gelb, oberseits lackartig glänzend, die Spitze der Mandibeln und die letzten Fühlerglieder angedunkelt, nämlich Glied 4 bis 7 auf der erweiterten Innenecke, die folgenden Glieder fast ganz. Die Art ist durch den Fühlerbau ausgezeichnet, Glied 1 ist dick, annähernd kugelig, 2 viel kürzer und wenig schmaler, quer, 3 ist äusserst klein, leicht zu übersehen; es bildet einen kurzen, feinen Cylinder, die folgenden Glieder sind nach innen zahnförmig erweitert, quer, das 4. nur wenig schmaler als die übrigen. Stirn mit einem Längseindrucke und einigen Punkten zwischen den Augen. Thorax und Schildchen zerstreut punktulierte. Flügeldecken mit einem weiten Quereindrucke hinter der Schulter, äusserst fein gereiht-punktiert, die Punkte nur in der Nähe des Quereindruckes, an den Seiten und dicht vor der Spitze unter stärkerer Vergrösserung bemerkbar.

4. *Exema philippina* sp. nov.

Quadrato-elongata, atra, opaca, prothorace carinis sex, elytris subseriatim punctatis, singulo tuberculis decem munitis.

Long. 2.5–2.7 mm.

LUZON, Manila (*Charles S. Banks*).

Type, No. 7018, in der Entomologischen Sammlung des Bureau of Science, Manila.

Den beiden bis jetzt bekannten asiatischen Arten mit 6 feinen Längsleisten auf dem Thorax und 3 auf dem Pygidium sehr ähnlich, aber breiter gebaut und ohne merkliche Längsleisten auf den Flügeldecken. Länglich viereckig, matt, schwarz, Kopf und Thorax dicht und fein nabelig punktiert, die Punkte werden auf dem vorderen Abfalle des Thorax, namentlich im mittleren Teile, grösser und tiefer. Flügeldecken in Reihen punktiert, die durch je 10 niedrige Höcker gestört werden. Der 1. liegt an der Basis in der Ausrandung des Thorax, der 2. dahinter zwischen der zweiten und dritten Punktreihe, neben diesem, aussen an der 4. Reihe, befindet sich der 3. Höcker, welcher in Form einer schräg nach vorn und aussen laufenden Querleiste

mit der dicken Schulterbeule verbunden ist. In der Mitte liegen Querhöcker (einer an der Naht, der andere am Seitenrande), dahinter 3 (einer an der Naht, die beiden andern weiter nach aussen hintereinander), vor dem Hinterrande der Flügeldecken endlich 2 Höcker.

5. *Coenobius manilensis* sp. nov.²

Oblong-ovalis, niger, nitidus, antennis articulis 5 primis, pedibus anticis, tibiarum posticarum apice tarsisque testaceis, prothorace utrinque stria profunda oblique impresso, disco postice parce punctulato, elytris punctato-striatis. Long. 2 mm.

LUZON, Rizal, Montalban (*Charles S. Banks*).

Type, No. 5220, in der Entomologischen Sammlung des Bureau of Science, Manila.

Durch die Punktierung des Thorax und die Farbe der Beine von den ähnlichen asiatischen Arten verschieden, am nächsten mit dem grösseren *C. sulcicollis* Baly aus Japan verwandt, bei dem Kopf und Thorax rot gefärbt sind.

An den Fühlern sind die ersten 5 Glieder gelbbraun, die folgenden erweiterten Glieder pechschwarz. Der Thorax ist glatt,

²Von Borneo liegt mir eine breiter gebaute Art vor:

Coenobius basalis sp. nov.

♀ ovalis, fulvus, pectore, limbo basali prothoracis scutelloque nigris, elytris (limbo apicali excepto) nigro-coeruleis, punctato-striatis.

Long. 2 mm.

BORNEO, Kina Balu.

Durch Staudinger erhalten.

Der Körper ist gelblich rot, Fühler, Taster und Beine heller und mehr gelb, Seiten der Mittelbrust und die ganze Hinterbrust schwarz, der vordere Teil des ersten Bauchringes angedunkelt; ebenso ist ein Basalsaum des Thorax und das Schildchen schwarz. Die Flügeldecken sind sehr dunkel metallisch blau, ein Saum am Hinterrande, der von dem letzten Punktstreifen begrenzt wird, rotgelb. Der Thorax ist ziemlich glatt, vor dem dicht und stark punktierten Streifen, welcher den Hinterrand emporhebt, liegt eine weniger tiefe und unregelmässig punktierte Querlinie, die an den Seiten tiefer und breiter wird, hier schräg nach aussen und vorn läuft und in $\frac{1}{3}$ Länge nahe dem Seitenrande endet. Die Zwischenstreifen der Flügeldecken sind breit, leicht gewölbt, glatt und glänzend.

Bucharis constricticollis und *Melixanthus aterrimus* Jacoby, in Ann. Mus. Civ. Genova (1896), 382 und 383, haben auf der Stirn zusammenstossende Augen sowie ein lanzettliches Schildchen und gehören daher mit *Bucharis oculatus* und *laevicollis* Jac., die ich bereits, Deutsche Ent. Zeitschr. (1903), 33, Anmerkung 1, richtig stellte, zu *Coenobius*; dagegen ist *Coenobius discoidalis* Baly, Trans. Ent. Soc. Lond. (1877), 212, mit getrennten Augen, ein *Isnus*.

die vertiefte Punktreihe vor dem Hinterrande dicht und stark, ausserdem befinden sich in der Mitte auf der hinteren Hälfte der Scheibe wenig dicht stehende feine Punkte. Die Querlinie hinter dem Vorderrande ist fein, aber tief; hinter ihr liegt eine 2. feinere Linie und jederseits hinter der Mitte eine kurze Quervertiefung, welche sich zu einer Rinne ausbildet, die schräg nach vorn und aussen zum Seitenrande zieht, wo sie, etwas vom Rande entfernt, wenig vor der Mitte endet. Die Punktstreifen der Flügeldecken sind mässig stark und tief, der 4. ist hinten abgekürzt, der 6. sehr kurz. Beine pechschwarz, die Vorderbeine, die Spitze der Schienen an den 4 Hinterbeinen und die Tarsen sind gelbbraun. In der Basalhälfte der Vorderschienen ist der Rücken leicht angedunkelt.

6. *Scelodonta aeneola* Lef.

Die Fühler sind nicht „an der Basis rotgelb,“ wie in der Diagnose steht, sondern die ersten 5 oder 6 Glieder kupferrot, das 3. bis 5. zuweilen mit metallisch grünem Anfluge; die 3 schwärzlichen Querflecken jeder Flügeldecke heben sich sehr undeutlich aus der dunkel metallischen Grundfarbe heraus.

LUZON, Montalban Gorge (9505, *W. Schultze*) ; Bataan, Lamao (9822, *H. E. Stevens*).

7. *Scelodonta nitidula* Baly.

Baly hat die Art von Borneo und Singapore beschrieben, Jacoby, Ann. Mus. Civ. Genova (1889), 279, von Sumatra nachgewiesen, und ich erhielt sie durch Staudinger von Java. Ob diese Tiere wirklich auf *S. nitidula* zu beziehen sind steht dahin, denn die Fühler sind nicht „einfarbig schwarz“ (was bei keiner mir bekannten *Scelodonta* vorkommt), sondern haben die ersten 5 Glieder metallisch kupferig grün, ebenso ist die Querstrichelung des Thorax nahe dem Vorderrande nicht durch „einige tiefe Punkte,“ sondern durch eine dichte, einfache Punktierung ersetzt. Die Art ist vielleicht am besten an der Skulptur der Flügeldecken zu erkennen, auf denen die Punktreihen einander paarig genähert und die graden Zwischenstreifen vorn und hinten gewölbt sind. Der Schenkelzahn, namentlich an den Mittelschenkeln, ist bei den Palawan-Stücken merklich grösser als bei denen von Java.

PALAWAN, Iwahig (12287, *C. M. Weber*).

8. *Pagellia signata* sp. nov.

Oblong-ovalis, fulva, antennis apicem versus prothoraceque (apice excepto) infuscat, elytris fortiter punctato-striatis, in-

terstitiis costiformibus, limbo laterali usque pone medium maculisque tribus in singulo elytro nigris, sutura rufescente, femoribus posticis apice pectoreque nigris.

Long. 3–3.4 mm.

LUZON, Manila (1391, 1604, *Charles S. Banks*).

Neben *P. acuticosta* Lef. gehörig, länglich eiförmig, mässig gewölbt, rötlich gelb, die 5 Endglieder der Fühler und der Thorax mit Ausnahme eines Streifens am Vorderrande, zuweilen auch noch der Scheitel jederseits angedunkelt, zuletzt schwärzlich, Schildchen und Naht der Flügeldecken rotbraun. Auf den Flügeldecken ist ausserdem ein Seitensaum bis hinter die Mitte nebst 3 Makeln schwarz, die 1. auf der Schulter, die 2. hinter dem Basaleindrucke, die letzte hinter der Mitte.

Makel 2 und 3 werden vom dritten und fünften Punktstreifen begrenzt. Bei den dunkelsten Exemplaren dehnt sich Makel 3 bis an die Naht und den Seitenrand aus, und es entsteht so hinter der Mitte eine gemeinschaftliche Querverbinde. Unterseits ist die Mittel- und Hinterbrust, sowie die Spitze der Hinterschenkel schwarz. Kopf mässig dicht, fein punktiert, die Punkte der Stirn strichförmig, und meist zu längeren feinen Längsstrichen vereint. Thorax äusserst dicht, fein längsrunzelig punktiert, vor der Mitte gerundet-verengt. Der Hinterrand bildet eine feine Leiste, vor welcher zuerst eine feine, einreihig punktierte Querrinne, sodann ein schmaler glatter Querstreifen liegt. Flügeldecken in den Schultern heraustretend und breiter als der Thorax, dahinter ziemlich parallel, im letzten Drittel verengt und an der Spitze gemeinschaftlich breit abgerundet, auf der Scheibe etwas abgeflacht, tief gestreift, und in den Streifen dicht und kräftig punktiert; der 7. und 8. Streifen vereinen sich vor der Mitte zu einem.

9. *Lindinia tibialis* Lef.

Die Art ist 5–6 mm. lang, lebhaft und glänzend bräunlich rot gefärbt, Fühler gelblich, Spitze der Schenkel nebst Schienen und Tarsen schwarz, Klauen rot. Mit dieser Form wurde zugleich *L. tibialis* Aberration *nigripes* gefangen, bei der die Beine, Mittel- und Hinterbrust und der grösste Teil des ersten Bauchsegmentes tief schwarz gefärbt sind. Übergangsstücke fehlen.

LUZON, Benguet, Trinidad (8168, 8233, *Charles S. Banks*).

10. *Chrysopida nigrata* sp. nov.

Elongata, subcylindrica, nigra, parum nitida, antennis articulis 4 primis, vertice femoribusque leviter aëneo indutis, prothorace tumido, opaco, parce obsoletissime punctato, elytris

infra basin impressis, striato-punctatis, subtiliter griseo-pubescentibus, fasciis duabus glabris.

Long. 8 mm.

LUZON, Benguet, Irian River (*R. C. McGregor*).

Type, 7219 in der Entomologischen Sammlung des Bureau of Science, Manila.

Schwarz, die ersten 4 Fühlerglieder zuweilen rotbraun, nebst dem Raume zwischen Fühlerwurzel und Auge, dem oberen Rande des Scheitels, dem Schildchen und der Basalhälfte der Schenkel mit einem wenig in die Augen fallenden metallisch dunkelgrünen Anfluge. Clypeus mässig dicht und fein punktiert, von der Stirn tief geschieden; letztere sparsam punktuert, mit einer durchgehenden Mittelleiste, die unten in eine kurze Rinne übergeht. Thorax länger als breit, an den Seiten schwach gerundet, oben höckerartig gewölbt, matt, sparsam und äusserst verloschen punktiert, an den Seiten greis behaart. Flügeldecken in regelmässigen Reihen vor der Mitte stark, dahinter schwach punktiert, sehr kurz und fein greis behaart mit 2 kahlen Querstreifen. Der 1. liegt vor der Mitte, hinter dem kräftigen Quereindrucke, der die Basalbeule emporhebt, und ist ziemlich breit, der 2. hinter der Mitte ist schmaler. Unterseits sind ein dreieckiger Raum an den Seiten der Hinterbrust und die Epimeren dicht weisslich behaart, der Schenkelzahn ist kräftig, spitz.

11. *Colasposoma rugiceps* Lef.

LUZON, Bataan, Lamao (9148, *W. Schultze*).

12. *Abirus philippinensis* Baly.

MINDORO, Mansalay (11406, *D. C. Worcester*); PALAWAN, Bacoit (11808, *C. M. Weber*).

13. *Phytorus gibbosus* Lef.

LUZON, Bataan, Limay (11936, *R. J. Alvarez*).

14. *Phytorus lineolatus* sp. nov.

Ellipticus, convexus, testaceo-rufus, nitidus, antennis pedibusque fulvis, prothorace minus dense subtiliter punctato, limbo laterali sublaevi, elytris punctato-striatis, striis brunneis, margine laterali haud dilatato, femoribus posticis dente minuto armatis.

Long. 5–6 mm.

BATAN ISLAND (*R. C. McGregor*).

Type, No. 7786, in der Entomologischen Sammlung des Bureau of Science, Manila.

In der Grösse dem *P. puncticollis* Lef. ähnlich, jedoch ohne Spur einer Erweiterung des Seitenrandes der Flügeldecken; grösser, bedeutend breiter gebaut als *P. simplex* Lef., den ich von Borneo besitze.

Elliptisch, hoch gewölbt, gesättigt bräunlich rotgelb, Fühler und Beine heller und mehr gelblich, die Punkte in den Streifen der Flügeldecken in einem schwärzlich-braunen Kreise eingestochen, so dass die Decken dunkel liniert erscheinen. Kopfschild am Vorderrande in 3 Bogen ausgeschnitten und hier breiter als lang, nach oben etwas verengt und von der Stirn scharf geschieden. Letztere ist unten glatt, mit kurzer Mittelrinne, darüber verloschen punktiert. Thorax doppelt so breit als lang, vor der Basis am breitesten und von hier aus nach vorn gerundet-verengt, wenig dicht, fein und namentlich flach punktiert, an den Rändern fast glatt. Flügeldecken an der Basis so breit wie der Thorax, mit abgerundeter Schulterecke, an den Seiten bis $\frac{1}{4}$ der Länge erweitert, dann ziemlich parallel, im letzten Drittel verengt und hinten nicht breit gemeinschaftlich abgerundet, oben fein gestreift und in den Streifen fein punktiert. Die inneren Zwischenstreifen sind fast eben, die äusseren leicht gewölbt. Die Vorderschenkel sind einfach, die Hinterschenkel haben ein Zähnchen.

15. *Cleoporus cruciatus* Lef.

MINDORO, Magaran (12272, C. M. Weber).

16. *Oides metallica* Jac.

Wurde auf Borneo von Herrn J. E. A. Wahr in einem Exemplare gefangen, welches durch das oberseits schwärzliche erste Fühlerglied abweicht.

17. *Oides flavida* Duviv.

LUZON, Laguna, Mt. Makiling (8598, Charles S. Banks).

18. *Oides sternalis* sp. nov.

Ovalis, convexa, albido-flava, nitida, elytrorum disco dilute ochraceo, antennis articulis tribus ultimis infuscatis, metasterno piceo; capite, prothorace scutelloque sublaevibus, elytris sat crebre subtilissimeque punctatis.

Long. 7.5 mm.

LUZON, Cagayan, Taut (D. C. Worcester).

Type, No. 11825 in der Entomologischen Sammlung des Bureau of Science, Manila.

Den übrigen Philippinen-Arten namentlich *O. subtilissima*, *flavida* und *elliptica* Duviv. überaus ähnlich, aber an den Fühlern sind die 3 letzten Glieder und die Spitze des achten Gliedes schwärzlich, die Hinterbrust (ohne die Seitenstücke) pechschwarz. Thorax etwa dreimal so breit als lang, nach vorn schwach verengt, die Hinterecken breiter abgerundet als die Vorderecken, die Scheibe fast glatt. Auf den Flügeldecken sind die Punkte sehr fein, erscheinen aber grösser, weil sie von einem feinen, bräunlich durchschimmernden Ringe umgeben sind. Die Scheibe hat aussen, hinter der Schulter, einen schwachen Quereindruck; zuweilen liegt etwas hinter diesem, dicht vor der Mitte, eine kleine, gerundete schwärzliche Makel.

19. *Aulacophora uniformis* Chap.

Bei reichlichem Materiale dürfte sich herausstellen, dass diese vom Autor subopac genannte Art nebst *A. albicornis* Chap. nur Skulptur- und Farbenabänderungen von *A. rosea* F. sind. Unter den auf Negros gefangenen Exemplaren mit einfarbig roten Flügeldecken befanden sich auch solche, die hinter der Mitte jeder Decke eine gerundete, schwarze Makel besitzen, welche vom Seitenrande und der Naht ungefähr gleichweit entfernt bleibt: ab. *bipunctata*.

NEGROS, Mount Canlaon (12879, *Charles S. Banks*).

20. *Morphosphaera peregrina* sp. nov.

Nigra, nitida, articulo ultimo antennarum albido, scutello, elytris pectoreque rufo-brunneis, abdomine fulvo; prothorace punctulato, elytris sat dense punctatis.

Long. 6–6.5 mm.

PALAWAN, Bacuit (*C. M. Weber*).

Type, No. 11800, in der Entomologischen Sammlung des Bureau of Science, Manila.

Kopf schwarz, fast glatt, mit einer Querfurche zwischen den Augen und einer weiten Mittelrinne zwischen den Fühlern. Letztere reichen bis hinter die Mitte der Flügeldecken und sind ähnlich verdickt wie bei *M. sumatrana* Jac., schwarz, Glied 1 lang, 2 kurz und dünn, 3 um die Hälfte länger als 2 und nach der Spitze hin etwas erweitert, 4 so lang als die beiden vorhergehenden zusammen, aber, nebst den folgenden Gliedern, dicker. Diese nehmen allmählich an Länge etwas ab, Glied 10 und 11 sind eine Spur dünner, 10 wird nach der Spitze hin rötlich, 11 ist gelblich weiss. Thorax fast dreimal so breit als lang, vorn un-

bedeutend schmaler als hinten, die Seiten leicht gerundet, Vorderecken stumpf, Hinterecken abgerundet, die Scheibe zerstreut und sehr fein punktiert, glänzend schwarz, Schildchen und Flügeldecken hell rötlich braun, ersteres glatt, letztere mässig dicht punktiert. Die Punkte nehmen nach aussen und auf dem Abfalle zur Spitze an Stärke ab. Unten ist die Mittel- und Hinterbrust blass rötlich braun, der Bauch mehr gelblich, Beine schwarz, Enddorn der Schienen sehr klein, Klauen mit Basalzahn. Vordere Hüftpfannen offen.

Die Art, von der mir 2 nicht ganz ausgehärtete Stücke vorliegen, weicht durch die Färbung und den nach vorn wenig verengten Thorax erheblich von den übrigen Arten ab.

21. *Galerucella philippinensis* Boh.

LUZON, Benguet, Trinidad (8203, *Charles S. Banks*).

22. *Galerucella mindorana* sp. nov.

Albido-flava, dense brevissimeque cinereo pubescens, antennis ab articulo quarto nigris, fronte deplanata, punctata, prothorace crebre punctulato, impressionibus obsoletis, elytris creberrime subruguloso-punctatis, disco leviter brunnescentibus.

Long. 5.5 mm.

MINDORO, Bongabon (*W. Schultze*).

Type, No. 8393, in der Entomologischen Sammlung des Bureau of Science, Manila.

Der *G. sumatrana* Jac. sehr ähnlich, kleiner, die Fühler schwarz, nur die 3 ersten Glieder und die Basis des vierten hell bräunlich gelb, die Stirn bildet mit dem Scheitel eine grosse, abgeflachte und dichtrunzelig punktierte Fläche, und die Vertiefungen des Thorax (eine Mittelrinne und eine Querrinne jederseits davon) sind sehr flach und verloschen. Die feine und äusserst dichte Punktierung der Flügeldecken ist in beiden Arten ähnlich, zu zarten Querrunzeln verbunden.

23. *Pseudocophora ventralis* sp. nov.

Brunneo-flava, nitida, ventre flavo, metasterno pedibusque quatuor posticis nigris.

Mas: segmento ultimo abdominali trilobato, lobo intermedio deplanato, elytris infra basin fovea magna suturali, antice tuberculum conicum suturalem terminata, impressis.

Femina: pygidii apice toruloso.

Long. 5–5.8 mm.

PALAWAN (*Staudinger*).

Den übrigen, bis jetzt bekannten 17 Arten³ in der Körperform ähnlich, aber durch die Färbung leicht zu unterscheiden. Der Körper ist glänzend rötlich gelbbraun, die Hinterbrust und die 4 Hinterbeine schwarz, der Bauch weisslich gelb. Beim ♂ ist der breite Mittelzipfel des Analsegmentes abgeflacht, das Pygidium breit abgestutzt, und jede Flügeldecke besitzt unmittelbar an der Naht eine ovale Grube, die vorn durch einen zahnförmigen Höcker begrenzt und vom Schildchen geschieden wird. In dieser Grube ist die Nahtkante fein und nicht besonders hoch, in der Mitte unmerklich verdickt und mit einem Büschel von kurzen, weisslichen Härchen besetzt, die nach aussen gerichtet sind. Der Höcker ist vorn, dicht unter der Spitze, leicht grubig vertieft, hinten sparsam bewimpert. Beim ♀ ist der hintere, wulstartig verdickte Teil durch eine tiefe, gebogene Querfurche

³ In meiner Sammlung befinden sich noch folgende zwei Arten:

Pseudocophora monticola sp. nov.

Fulva, nitida, pectore, abdomine pedibusque quatuor posterioribus nigris.

Mas: segmento ultimo ventrali trilobato, lobo intermedio deplanato, elytris infra basin fovea magna, antice tuberculum suturalem conicum, crassiusculum terminata, impressis.

Femina: pygidii apice toruloso.

Long. 5-5.5 mm.

BORNEO, Kina Balu (*Staudinger*).

Von *P. ventralis* nur in folgenden Punkten verschieden: Der Hinterleib ist tief schwarz, wie die Hinterbrust und die 4 Hinterbeine, der zahnförmige Nahthöcker des ♂ hinter dem Schildchen etwas dicker und höher, die Erhebung der Nahtkante in der Mitte der Grube ebenfalls deutlicher, stärker behaart und die wulstartige Verdickung am Hinterrande des Pygidium beim ♀ ist vorn von einem tiefen, aber weiten, gebogenen Quereindrucke begrenzt.

Pseudocophora flavipes sp. nov.

♂ flava, pectore, abdomine (medio segmenti ultimi excepto) elytris nigris, his pone medium fulvis, infra basin fovea magna impressis.

Long. 4.5 mm.

JAVA (*Scriba*).

Kopf, Fühler, Thorax und Beine sind hell gelb, ebenso ein Längsstreifen in der Mitte des letzten Bauchsegmentes, welcher genau die Breite des Mittelzipfels einnimmt, der übrige Teil des Bauches, die Hinterbrust und die Flügeldecken sind schwarz, letztere mit einem gemeinschaftlichen rotgelben Flecke, welcher die hintere Hälfte einnimmt und nur einem am Hinterrande etwas erweiterten schwarzen Seitensaum frei lässt. Bei dem mir allein vorliegenden ♂ hat jede Flügeldecke hinter dem Schildchen an der Naht eine ovale Grube, die aussen und vorn nicht scharf begrenzt ist, keinen Zahn, aber hinter der Mitte eine verdickte und leicht erhöhte Nahtkante besitzt. Der gelbe Mittelzipfel des Analsegmentes ist ebenfalls abgeflacht.

vom vorderen geschieden. Die Punktierung der Flügeldecken ist wie bei den anderen Arten, hinter der Mitte fein und verworren, vor derselben dichter und stärker und unregelmässig gereiht.

24. *Dercetes soluta* sp. nov.

Testaceo-flava, nitida, antennis articulo ultimo apice infuscato, prothorace latera versus punctulato et parce punctato, elytris infra basin haud impressis, crebre punctatis, fascia basali communi et maculis duabus in singulo pone medium nigris.

Long. 5.5–6 mm.

LUZON, Benguet, Trinidad (*Charles S. Banks*).

Type, No. 8201, in der Entomologischen Sammlung des Bureau of Science, Manila.

Durch die nach hinten nicht erweiterten Flügeldecken, auf denen keine Spur eines Eindruckes hinter der Basis vorhanden ist, von den meisten übrigen Verwandten⁴ abweichend. Der Körper ist hell bräunlich gelb, Beine und Flügeldecken blasser gelb, die Endhälfte der letzten Fühlerglieder angedunkelt und die Flügeldecken schwarz gezeichnet. Diese Zeichnung besteht aus einer gemeinschaftlichen Querbinde und zwei Makeln auf jeder Decke. Die Binde liegt an der Basis und nimmt etwa $\frac{1}{3}$ der Länge ein, sie verbreitert sich aussen und zieht dort saumförmig bis zur Mitte. Die innere Makel ist quer, innen breiter als aussen, vorn bogenförmig, hinten mehr gradlinig begrenzt, beginnt wenig vor der Mitte und dehnt sich von der Nahtkante bis neben die 2. Makel aus. Diese bildet einen Saum am Seitenrande ungefähr von $\frac{1}{2}$ bis $\frac{3}{4}$ der Länge und berührt zuweilen an der inneren Vorderecke die 1. Makel. Der Thorax ist in der Mitte glatt, nach den Seiten hin fein punktiert, mit eingestreuten stärkeren Punkten. Die Flügeldecken sind in den Schultern breiter als der Thorax, dahinter fast parallel, am Ende schmal abgerundet, auf der Schulter glatt, sonst fein punktiert.

25. *Haplosonyx albicornis* Wiedem.

PALAWAN, Iwahig (10738, *W. Schultze*); Mt. Capoas (12383, *C. M. Weber*).

26. *Haplosonyx banksi* sp. nov.

Subparallela, convexa, fulva, antennarum articulis intermediis fuscis, prothorace lateribus subparallelo, disco utrinque foveo

⁴Diese Arten wurden seither als *Antipha* Baly, Ann. Nat. Hist. (1865), III, 16, 251, geführt, müssen aber den älteren Namen *Dercetes* Clark, *Ibid.* (1864), III, 15, 146, erhalten.

rotunda impresso, elytris saturate cyaneis, hic illic viridiaeneo-micantibus, crebre punctatis.

Long. 14–15 mm.

NEGROS OCCIDENTAL, Bago (*Charles S. Banks*).

Type, No. 6276, in der Entomologischen Sammlung des Bureau of Science, Manila.

In der Körperform dem *H. chalybaeus* Hope (*elongatus* Baly) am ähnlichsten, aber die Flügeldecken stärker gewölbt, mit viel höherer, besser begrenzter Basalbeule und ganz verworrenere Punktierung; in der Färbung mehr dem *H. nigripennis* Jac.⁵ ähnlich, jedoch schlanker gebaut, die Beine einfarbig rotgelb, der Eindruck jederseits auf dem Thorax nicht quer, sondern rund, grubenförmig, der mittlere Teil der Scheibe fast eben. Die Fühler sind in allen drei Arten schwärzlich, die ersten drei Glieder rötlich gelbbraun, ähnlich auch die drei letzten, oder das Endglied heller als die beiden vorhergehenden, mit schwarzer Spitze. *H. concinnus* Baly, der dem *nigripennis* Jac. verwandt sein dürfte, ist durch das 3. Fühlerglied ausgezeichnet, welches ganz gegen die Gattungsdiagnose viermal so lang als Glied 2 und ziemlich so lang als Glieder 4 und 5 zusammen sein soll.

27. *Haplosomyx fulvicornis* sp. nov.

Crassiusculus, fulvus, prothorace fovea transversa utrinque impresso, elytris cyaneis vel cyaneo-viridibus, subtiliter punctatis.

Long. 13–18 mm.

LUZON, Cagayan, Tapil (*H. M. Curran*).

Type, No. 10664, in der Entomologischen Sammlung des Bureau of Science, Manila.

Breiter gebaut als *H. nigripennis* Jac., rotgelb, nur die Flügeldecken metallisch dunkel blau bis bläulich grün, glänzend. Fühler bis zur Mitte der Flügeldecken reichend, beim ♂ viel dicker als beim ♀, Glied 3 kaum doppelt so lang als 2, 4 wenig länger als die beiden vorhergehenden zusammen. Der Thorax ist fast dreimal so breit als lang und hat ziemlich parallele, vor der Mitte nur leicht gerundet-erweiterte Seiten, auf der Scheibe jederseits eine grosse Quergrube und im mittleren, etwas abgeflachten Teile 2 sanfte Vertiefungen, vor der Mitte und vor dem Schildchen. Die Flügeldecken sind fein und wenig dicht punktiert, mit einer kräftigen, gut umgrenzten Basalbeule.

⁵ *Haplosomyx nigripennis* erhielt ich von Borneo, Bangkei und Celebes. Bei ihm sind die Flügeldecken sehr dunkel blau bis violett gefärbt, ohne grüne Beimischung, in seltenen Fällen rein schwarz.

28. *Haplosonyx philippinus* sp. nov.

Oblongus, fulvus, nitidus, antennis flavo-albidis, articulo tertio parvo, tibiis tarsisque plus minusve infuscatis, prothorace subtiliter punctato, utrinque profunde transversim impresso, elytris minus dense subtiliter punctatis, punctis ante medium hinc inde subseriatis.

Long. 10.5–12 mm.

MINDANAO, Agusan River (12535, A. Celestino).

Wenig grösser als *H. sumatrae* Weber und von diesem durch helle Unterseite und Fühler, das kurze 3. Fühlerglied, deutliche Punktierung des Thorax und verloschenere Punktierung der Flügeldecken verschieden, auf denen Punktreihen nur vor der Mitte angedeutet sind. In Farbe und Fühlerbildung mit *H. indicus* Jac. fast übereinstimmend, die Flügeldecken aber vor der Mitte nicht doppelreihig punktiert und gerunzelt. Die Beine sind in den hellsten Stücken einfarbig rotgelb, haben aber auf dem Rücken der Schienen und Tarsen einen dunklen Anflug; andere Exemplare, deren Oberseite mehr rot gefärbt ist, haben schwärzliche Schienen und Tarsen.

29. *Cynorta signifera* sp. nov.

Elongata, citrina, nitida, metasterno abdomineque (lateribus excepto) nigricantibus, capite, prothorace scutelloque fulvo indutis, elytris obsolete sulcatis (apice excepto) nigro limbatis, singulo maculis duabus nigris, 1, 1.

Long. 5.5–6 mm.

PALAWAN, Bacuit (C. M. Weber).

Type, No. 12262, in der Entomologischen Sammlung des Bureau of Science, Manila.

Der *C. 4-plagiata* Ws. in Körperform und Farbe ähnlich, citronengelb; Kopf, Thorax und Schildchen mit etwas rötlicher Beimischung, Hinterbrust (ohne die Seitenstücke) nebst der Mitte des Bauches schwärzlich, die Spitze des Bauches und die Seiten gelblich, ein Saum am Vorder- und Seitenrande und an der Naht, sowie 2 Makeln auf jeder Decke schwarz. Der Nahtsaum ist in $\frac{1}{4}$ der Länge und der Seitensaum nach der Mitte hin verbreitert, beide verengen sich nach hinten und lassen den Hinterrand frei. Der Basalsaum ist schmal. Die Makeln jeder Flügeldecke sind klein bis mässig gross, länger als breit, oval, die 1. liegt in $\frac{1}{4}$ der Länge in dem weiten aber kräftigen Eindrucke, welcher den Basalhöcker emporhebt, die zweite etwas hinter der Mitte. Fühler sehr schlank, fast so lang als der Körper, die Spitze des letzten Gliedes unbedeutend angedunkelt. Stirn und Thorax fast glatt, weitläufig und sehr verloschen

punktuliert; auf letzterem sind die beiden Quereindrücke zu einer weiten und ziemlich tiefen bogenförmigen Querfurche vereint. Flügeldecken dicht mit äusserst feinen, von einem dunkel durchscheinenden Hofe umgebenen Punkten besetzt; die Scheibe ist vom Eindrücke hinter der Basis bis auf den Abfall zur Spitze der Länge nach sanft gefurcht, mit leicht gewölbten Zwischenstreifen.

Das ♂ hat keine Stirnauszeichnung, aber einen durch 2 Einschnitte gebildeten quadratischen Mittelzipfel des letzten Bauchringes.

30. *Cynorta discoidea* sp. nov.

Elongata, citrina, nitida, postpectore abdomineque (lateribus excepto) nigris, scutello brunneo, elytris obsolete sulcatis, pone basin transversim impressis, impressione vittaque pone humeros fuscis.

Long. 6 mm.

PALAWAN, Iwahig (W. Schultze).

Type, No. 12264, in der Entomologischen Sammlung des Bureau of Science, Manila.

Der vorigen ähnlich, unterseits dunkler gefärbt, wie auch die Seitenstücke der Hinterbrust schwarz sind, das Schildchen braun und die Flügeldecken völlig abweichend gezeichnet. Hier ist der Basaleindruck neben der Naht und eine Längsbinde jeder Flügeldecke braun bis schwärzlich. Diese Binde beginnt hinter der Schulterbeule, nach aussen von dem dunklen Querfleck im Basaleindrucke, und läuft grade nach hinten. Bei dem einen der vorliegenden beiden Stücke endet sie plötzlich dicht hinter der Mitte, bei dem andern setzt sie sich, indem sie schnell nach aussen biegt, neben dem abgesetzten Seitenrande bis vor die Spitze fort. Auch die Naht ist angedunkelt. Die Skulptur der Oberseite ist ähnlich wie in der vorigen Art, der Thorax hat aber einen weiten und tiefen graden Quereindruck, der den grössten Teil desselben einnimmt.

31. *Monolepta baeri* All., Naturaliste (1888), 3, fig. 1.

Diese hübsche Art wurde von Herr Banks auf Luzon gefangen. Sie ist schwarz, Fühler grösstenteils rötlich gelbbraun, das Kopfschild, 2 Längsbeulen des Scheitels, 2 Basalmakeln des Thorax und 4 Makeln auf jeder Flügeldecke (1, 1, 1, 1) weisslich gelb. Makel 1 ist die kleinste, länglich, hinter der Basis nahe dem Schildchen, 2 und 3 liegen in der Mitte der Scheibe in ungefähr $\frac{1}{3}$ und $\frac{2}{3}$ Länge, 4 ist quer und befindet sich vor dem Hinterrande, nahe der Naht.

LUZON, Zambales, Olongapo (7584, Charles S. Banks).

32. *Monolepta puncticollis* All., Naturaliste (1888), 3, fig. 2.

Der Name erweckt die falsche Vorstellung, dass der Thorax stark oder dicht punktiert sei, die richtige Bezeichnung wäre etwa „*maculicollis*,“ weil der Thorax 4 schwarze Makeln besitzt, 2 grössere, dicht neben einander, in der Mitte, und 2 kleine, weit getrennte nahe der Basis. Bei dem einzigen mir vorliegenden ♂ ist der Seitenrand der Flügeldecken hinter der Schulter auf eine kurze Strecke in leichtem Bogen erweitert und verdickt und mit einem schmalen Längsgrübchen besetzt. Etwas weiter nach innen liegt in der braunen Querbinde eine grössere runde Grube. Die Fühler sind verhältnismässig dick, gelbbraun, Glied 11 schwärzlich.

LUZON, Manila (3725, *Charles S. Banks*).

33. *Monolepta hieroglyphica* Motsch. ab. *simplex*.

Bei der Stammform aus Vorder- und Hinterindien, Nias, Sumatra, etc. verlängert sich die schwarze Querbinde der Flügeldecken, die vor der Mitte liegt, auf der Scheibe jeder Decke nach hinten in einen Ast, der sich zuletzt nach aussen krümmt. Dieser Ast fehlt den Stücken von Luzon stets. In allen übrigen Merkmalen stimmen diese Tiere mit *M. hieroglyphica* überein. Mit letzterer, die Motschulsky, Etud. ent. (1858), 104, fälschlich als *Luperodes* betrachtete, ist *M. elegantula* Boh., Resa Eug. (1859), 183, identisch.

LUZON, Benguet, Trinidad (8199, *Charles S. Banks*).

34. *Monolepta* (Candezea) *palawana* sp. nov.

Ovalis, convexa, nigra, nitida, capite antico, antennis tenuissimis et elytrorum apice fulvis, ventre flavo, fronte, prothorace scutelloque rufis; prothorace obsolete transversim impresso, elytris crebre punctatis.

Long. 6 mm.

PALAWAN, Bacuit (*C. M. Weber*).

Type, No. 11806, in der Entomologischen Sammlung des Bureau of Science, Manila.

Durch eigentümliche Farbenverteilung ausgezeichnet. Mittel- und Hinterbrust und die Flügeldecken sind tief schwarz, die Beine pechschwarz, der Bauch blass gelb, der Kopf unterhalb der Fühler und diese selbst, sowie etwa das letzte der Flügeldecken rotgelb, Stirn, Thorax und Schildchen rot. Die Fühler sind sehr dünn, Glied 3 doppelt so lang als 2, 4 länger als 2 und 3 zusammen. Thorax doppelt so breit wie lang, an den Seiten leicht gerundet, mit einem weiten und flachen Quereindrucke

nahe der Mitte der Scheibe; in der Mitte fast glatt, nach den Seiten hin punktiert, über den Vorderecken dichter und feiner als dahinter, Flügeldecken in den Schultern breiter als der Thorax, dahinter bis an die Abrundung zur Spitze wenig erweitert, hinten gerundet abgestützt, ohne Basaleindruck, dicht und ziemlich fein punktiert.

35. *Nacrea philippina* sp. nov.

Oblonga, convexa, fulva, nitida, prothorace sublaevi vix vel haud impresso, elytris subtiliter punctatis, latera versus sublaevibus, limbo lato basali et laterali nigro-coeruleis interdum aeneomicantibus.

Mas: antennis articulo tertio valde dilatato, compresso, unidentato.

Long. 7.5–8 mm.

PALAWAN, Iwahig (C. M. Weber).

Type, No. 11642, in der Entomologischen Sammlung des Bureau of Science, Manila.

Durch Skulptur und Färbung, sowie den kleinen Zahn am Innenrande des dritten Fühlergliedes beim ♂ ausgezeichnet. Rötlich gelb, stark glänzend, ein Saum am Vorder- und Seitenrande der Flügeldecken schwärzlich blau, zuweilen grünlich schimmernd. Dieser Saum nimmt vorn den Raum von der Basis bis an den Quereindruck in etwa $\frac{1}{4}$ der Länge ein und zieht sich, bald etwas schmaler, bald breiter, am Seitenrande bis zur Naht in der Spitze, so dass ein mehr oder weniger grosser, schildförmiger, gemeinschaftlicher Scheibenfleck (vorn abgestützt, an den Seiten parallel, hinten abgerundet) rotgelb bleibt. Bei frischen Exemplaren lässt der Seitensaum oft den Rand selbst frei und ist hinten abgekürzt. Der Thorax ist quer, vor der Mitte am breitesten, nach vorn etwas mehr als nach hinten, im ganzen aber wenig verengt, die Scheibe sanft gewölbt, glatt, die beiden normalen Gruben kaum angedeutet. Die Flügeldecken sind wie in den anderen Arten gebaut, hinten gerundet abgestützt, innen sehr fein punktiert, aussen gewöhnlich fast glatt. Das 2. zusammengedrückte und stark erweiterte Fühlerglied des ♂ ähnelt dem von *N. fulvicollis* Jac., hat aber am Innenrande ein spitzes Zähnchen.

Bei einem ♂ sind beide Fühler gleichmässig verkrüppelt, 9-gliedrig, Glied 3 breiter als gewöhnlich, 4 nach oben erweitert, 8 in der oberen Hälfte und 9 vor der Spitze verdickt.

Die Gattung wurde von Jacoby zuerst *Neocharis* (vergebener

Name!) und später *Metellus* genannt. Diese Bezeichnung kann jedoch nicht Geltung erlangen, da Baly inzwischen den Namen *Nacreia* eingeführt hatte. Sonach würde die Gattung folgende Gestalt haben:

Nacreia BALY, Trans. Ent. Soc. Lond. (1886), 29 (März).

Neocharis JAC., Proc. Zool. Soc. Lond. (1881), 448.

Metellus JAC., Ann. Mus. Civ. Genova (1886), 63 (Otober); Ent. Zeitg. Stett. (1899), 298.

1. *fulvicollis* JAC., Proc. Zool. Soc. Lond. (1881), 448; Notes Leyd. Mus. (1884), 56. Java.

maculata BALY, Trans. Ent. Soc. Lond. (1886), 29; JAC., Ent. Zeitg. Stett. (1899), 298.

femoralis ALL., Ann. Soc. Ent. Belg. (1889), comptes rendus 115; JAC., Ann. Soc. Ent. Belg. (1894), 197.

2. *apicipennis* BALY, Trans. Ent. Soc. Lond. (1886), 29. Java.

3. *laevipennis* JAC., Ann. Mus. Civ. Genova (1886), 62; Ent. Zeitg. Stett. (1899), 297, Taf. 1, Fig. 12. Sumatra.

4. *nigripennis* JAC., Ent. Zeitg. Stett. (1899), 297. Sumatra.

5. *costatipennis* JAC., Ann. Mus. Civ. Genova (1886), 498. Sumatra.

6. *philippina* Ws., huj. op. Palawan, Mindoro.

36. *Sermyloides banksi* sp. nov.

♂ oblongo-ovata, flavo-testacea, supra vix aeneo-micans, nitidula, antennis crassiusculis, articulo tertio ante medium dilatato, prothorace subtilissime punctulato, elytris sat crebre punctatis.

Long. 7.5 mm.

NEGROS OCCIDENTAL, Mt. Canlaon (*Charles S. Banks*).

Type, No. 12938, in der Entomologischen Sammlung des Bureau of Science, Manila.

Von den übrigen Arten durch bedeutend stärkere Fühler und den einfarbig rötlich gelben Körper ausgezeichnet, welcher wie gewöhnlich oberseits eine Spur metallisch grünen Schimmers zeigt und mässig glänzt. Der Kopf des ♂ (mir liegen 2 Exemplare vor) ist normal gebaut; die Fühler sind hoch auf der Stirn eingefügt, so dass der obere Rand der Stirnhöcker, welche einen ziemlich flachen, durch die Mittellinie geteilten Querstreifen bilden, in gleicher Höhe mit dem oberen Augenrande liegt. Der Raum unter den Fühlern ist viereckig, schwach concav, und trägt über dem abgestutzten Vorderrande jederseits ein kurzes, schräg aufgerichtetes Stäbchen. An dessen Spitze ist ein viel längeres, häutig durchscheinendes, weissliches Stäbchen befestigt, welches aus mehreren Härchen gebildet zu sein scheint und schräg nach innen gerichtet ist, so dass sich die Spitzen beider Stäbchen berühren. Die Fühler sind nicht ganz

so lang als der Körper, Glied 2 sehr klein, die übrigen lang und unter sich ziemlich von gleicher Länge, nur Glied 4 eine Spur länger, und die 3 Endglieder etwas kürzer. Die Glieder sind vom 3. an leicht zusammengedrückt und das letzte endet in eine deutlich abgesetzte Spitze, die durch eine dicht bewimperte Kante vom Basalteile getrennt ist. Thorax an der Basis mehr als doppelt so breit wie lang, nach vorn anfangs wenig, zuletzt stärker verengt, äusserst zart punktuliert. Die Borstentporen sind gross, die 1. liegt hinter den Vorderecken, die 2. in den Hinterecken. Schildchen lang dreieckig, Flügeldecken ziemlich dicht punktiert, mit verloschenen Pünktchen in den Zwischenräumen.

Mit *Sermyloides* Jac., Notes Leyd. Mus. (1884), 64, ist *Praeochrælea* Duviv., Ent. Zeitg. Stett. (1885), 245, identisch und die in den Sammlungen meist vertretene Art *basalis* Jac., loc. cit., 65, synonym mit *Galleruca pallicornis* Fabr., Syst. Eleut. (1801), 1, 482.

37. *Ozomena weberi* sp. nov.

♀ nigra, capite prothoraceque, rufis, elytris cyaneis vel viridianeis, creberrime subseriatim punctatis et obsolete elevatolineatis.

Long. 5.5–6 mm.

PALAWAN, Bacuit (*C. M. Weber*).

Type ♀, No. 11782, in der Entomologischen Sammlung des Bureau of Science, Manila.

Gestreckt, schwarz, Brust und Bauch mit blauem Schimmer, Kopf, Thorax und Vorderbrust rot, Flügeldecken metallisch dunkel blau oder grün. Fühler etwas kürzer als der Körper, Glied 2 klein, 3 fast so lang als 1, die folgenden bis zum zehnten Gliede nehmen allmählich eine Spur an Länge ab und sind nebst dem dritten dicht behaart. Thorax ziemlich glatt, so lang als breit, an den Seiten unbedeutend gerundet, die beiden Gruben der Scheibe gross und tief. Schildchen schwarz, glatt. Flügeldecken sehr dicht punktiert, mit feinen, leicht erhöhten Längslinien, zwischen denen die Punkte in 2 bis 3 unregelmässige Reihen geordnet sind. Es liegen 2 ♀ vor.

Die Art dürfte durch die einfarbig schwarzen Fühler und die Verteilung der beiden anderen Farben leicht zu erkennen sein. Bei frischen Stücken sind die Hüften nebst der Mitte der Mittel- und Hinterbrust rotbraun.

38. *Nisotra gemella* Er.

Durch die Punktierung der Flügeldecken in klaren Doppelreihen ausgezeichnet und wahrscheinlich nur auf die Philippinen beschränkt, obwohl verschiedene andere Arten aus der Indisch-malayischen Fauna darauf bezogen worden sind.

LUZON, Rizal, Montalban Gorge (9508, *W. Schultze*).

39. *Acrocrypta variabilis* Duviv.

An den Fühlern sind die 3 Endglieder weiss und von den 3 pechschwarzen Querbinden der Flügeldecken ist die 1. auf einen Basalsaum beschränkt, die beiden andern sind ziemlich breit, die vordere, in $\frac{1}{3}$ der Länge, ist mit dem Seitensaume verbunden.

MINDANAO, Zamboanga (13649, *T. C. Zschokke*).

40. *Aphthona wallacei* Baly, Trans. Ent. Soc. Lond. (1877), 178.

Geflügelt, unten schwarz, die Beine, mit Ausnahme der Hinterschenkel, und die ersten 4, seltener 5 oder 6 Fühlerglieder rotgelb, Oberseite metallisch dunkel blau, violett oder grün, äusserst zart gewirkt, matt. Nasenkiel leistenförmig, Stirnhöcker quer, schief gestellt, ringsum scharf begrenzt, Flügeldecken verloschen punktiert. Zuerst von der Insel Flores beschrieben.

PALAWAN, Bacuit (12350, *C. M. Weber*).

41. *Longitarsus manilensis* sp. nov.

Alatus, oblongus, convexiusculus, pallide flavescens, ore femorum posticorum apice ventreque nigris, antennis, (base excepta) fuscis, elytris subtiliter punctatis, sutura infuscatis.

Long. 2 mm.

LUZON, Manila (*W. Schultze*).

Type, No. 2703, in der Entomologischen Sammlung des Bureau of Science, Manila.

Den kleinen, europäischen Arten *L. pratensis*, *tantulus*, *nanus*, etc. ähnlich, blass gelb, mässig glänzend, Thorax, Mitte des Kopfes und die ersten 4 Fühlerglieder mehr rötlich, der Mund schwarz, der Scheitel bei ausgefärbten Stücken angedunkelt und die Fühler vom fünften Gliede ab schwärzlich. Unterseits sind die Seitenstücke der Hinterbrust, der Bauch und die Hinterschenkel auf dem Rücken in der oberen Hälfte schwarz. Nasenkiel hoch und ziemlich scharf, Stirn über den Fühlern mit einem Querstreifen von Punkten, ohne Höckerchen, darüber glatt. Thorax viereckig, um die Hälfte breiter als lang, ver-

loschen punktuliert. Flügeldecken deutlicher als der Thorax verworren punktiert, ein feiner, beiderseits abgekürzter Nahtsaum braun.⁶

⁶ Leicht wieder zu erkennen dürfte die folgende Art sein:

Longitarsus vittipennis sp. nov.

Alatus, sat elongatus, convexus, testaceo-flavus, nitidus, antennis articulis 4-9 fuscis, ore, femoribus posticis apice nigris, elytris substriato-punctatis, sutura vittaque media postice abbreviata nigris.

Long. 2 mm.

JAVA, Montes Tengger (*Frühstorfer*).

Die Stirnhöcker sind nicht getrennt, sondern bilden einen schwach gewölbten Querstreifen, der oben in eine gerade Querrinne abfällt, der Nasenkiel ist hoch und sehr scharf. Fühler so lang als der Körper, die ersten 3 Glieder rötlich gelbbraun, die folgenden 6 schwärzlich, Glied 10 weisslich gelb, ebenso die Basis des letzten, während der übrige Teil etwas ange dunkelt ist. Thorax viereckig, wenig breiter als lang, zerstreut und verworren punktiert, Schildchen schwärzlich. Flügeldecken in den Schultern breiter als der Thorax, ziemlich cylindrisch, hinten gemeinschaftlich abgerundet, auf der Scheibe fast regelmässig gereiht-punktiert, ein feiner Nahtsaum und eine Längsbinde jeder Decke schwarz. Die Binde beginnt schmal an der Basis, läuft dann auf der Innenseite des Schulterhöckers nach hinten und endet in $\frac{2}{3}$ Länge; sie erweitert sich hinter der Schulter und nimmt in der Mitte genau $\frac{1}{3}$ der Breite ein, so dass sie hier von der Naht und dem Seitenrande gleichweit entfernt bleibt.

Nach der Beschreibung steht diese Art wohl dem *L. annulicornis* Jac. am nächsten.

Zu den Gattungen mit offenen vorderen Hüftpfannen gehört auch *Thrasychroma* Jac., die vom Autor an eine ganz falsche Stelle gebracht worden ist.

Mir liegt davon noch folgende Art vor:

Thrasychroma javana sp. nov.

Subtus testacea, antennis (basi excepta), tibiis apicem versus tarsisque fuscis, capite, prothorace scutelloque testaceo-flavis, prothorace latera versus subtiliter punctato, elytris metallico-cyaneis, subtiliter punctatis.

Long. 3.8-4 mm.

JAVA, Tjitatjap (*Drescher*).

Der *Thr. submetallica* Jac., Ann. Mus. Civ. Genova (1885), 71, sehr ähnlich, breiter gebaut, die 3 oder 4 ersten Fühlerglieder nebst der Unterseite rötlich gelbbraun, die übrigen Fühlerglieder, sowie Schienenspitzen und Tarsen schwärzlich. Thorax ohne merklichen grünen Metallschimmer, an den Seiten nicht dicht und etwas feiner als die Flügeldecken punktiert.

Diese Gattung ist sehr kenntlich an dem langen dritten Fühlergliede und den 2 Quergruben des Thorax, von denen sich eine jederseits nahe der Mitte befindet. Die Gegend vor dem Schildchen ist abgeflacht und der Hinterrand dort leistenförmig aufgebogen.

42. *Dimax media* sp. nov.

Breviter-ovalis, convexa, fulva, nitida, antennis articulis 5–10 nigris, tarsis leviter infuscatis, prothorace subtiliter punctato, impressione sublaterali parce punctata, elytris dorso brunnescentibus, apice dilutioribus, dorso subtiliter punctatis.

Long. 5–5.5 mm.

PALAWAN, Bacuit (C. M. Weber).

Type, No. 12265, in der Entomologischen Sammlung des Bureau of Science, Manila.

Breit oval, stark gewölbt, rotgelb, glänzend, die Fühlerglieder 5 bis 9 schwarz, 10 weniger dunkel gefärbt, die Tarsen gebräunt. Flügeldecken dunkel braun, an den Rändern und vor der Spitze heller und mehr rötlich. Fühler halb so lang als der Körper, Glied 1 das längste, 2 das kürzeste, kaum doppelt so lang wie breit, 3 um die Hälfte länger als 2, die 4 folgenden und das Endglied dem dritten ungefähr gleich, 8 bis 10 etwas kürzer. Stirnhöcker flach, dreieckig, durch die Spitze des Kopfschildes getrennt, seicht umgrenzt. Thorax wenigstens doppelt so breit als lang, die Seiten sanft gerundet, ziemlich parallel, an der vorderen Borstenpore, die vor der Mitte eingestochen ist, leicht heraustretend, davor wulstartig verdickt und fast gradlinig verengt. Die Scheibe ist schwach gewölbt, nicht dicht, aber flach und fein punktiert, vor der Mitte etwas stärker als dahinter; nahe den Seiten glatt, mit einigen kräftigen Punkten in dem Längseindrucke über dem Seitenrande. Der hintere Borstenkegel ist kurz, stark. Flügeldecken wenig dichter und stärker als der Thorax punktiert, mit einer weitläufigen stärkeren Punktreihe am abgesetzten Seitenrande. Die Schulterbeule ist ziemlich gross, der normale grubenförmige Eindruck dahinter ist mässig stark.

Ausser den in Ins. Deutschl., 6, 1052, angegebenen Merkmalen von *Dimax* sind noch folgende zu erwähnen: Der Thorax hat einen mehr oder weniger tiefen Eindruck parallel dem Seitenrande und auf den verworren und fein punktierten Flügeldecken liegt eine kleine grubenförmige Vertiefung hinter der Schulter. Die Arten sind über die Indisch-malayische Fauna verbreitet, aber von Baly und Jacoby ohne Grund zu *Sphaeroderma* gerechnet worden. In vielen Sammlungen ist z. B. *Dimax laevipennis* Jac. (*Sphaeroderma*) aus Sumatra vertreten, auch dürfte hierher der *Argopus angulicollis* Clark, Ann. Mag. Nat. Hist. (1865), 148, gehören.

43. *Sphaeroderma negrosanum* ? sp. nov.

Subhemisphaericum, fulvum, nitidum, antennis articulis sex ultimis nigris, prothorace, subtilissime punctato, elytris subtiliter punctatis, punctis hinc inde seriatis, seriebus 8 et 9 integris.

Long. 2.2-2.5 mm.

NEGROS OCCIDENTAL, Bago (*Charles S. Banks*).

Type, No. 251, in der Entomologischen Sammlung des Bureau of Science, Manila.

Fühler halb so lang als der Körper, die ersten 4 Glieder rotgelb, das 5. rotbraun, die folgenden etwas verbreiterten Glieder schwarz. Thorax doppelt so breit wie lang, die Seiten leicht gerundet und nach vorn convergierend, die Scheibe stark querüber gewölbt und nicht dicht, sehr fein punktiert. Flügeldecken mässig dicht, fein punktiert, vor der Mitte sind einige kurze Punktreihen bemerkbar, die 8. und 9. Reihe sind deutlich und vollständig, der Raum zwischen der 9. Reihe und dem Aussenrande ist mässig breit, fast glatt.

44. *Enneamera thoracica* Baly.

Es wurde nur 1 Exemplar gefangen, bei dem der Thorax schwarz ist, ein schmaler Saum auf dem abgesetzten Seitenrande, in den Vorderecken makelförmig verbreitert, und ein Streifen am Innenrande von den Epipleuren der Flügeldecken bräunlich gelb.

LUZON, Benguet, Cabayan (*D. C. Worcester* und *R. C. McGregor*).

45. *Enneamera nigra* Jac., Ann. Mus. Civ. Genova (1896), 137.

Ist von Mentawai beschrieben; ich erhielt 2 Stücke von Palawan durch Herrn Oberdörffer.

⁷Durch die Färbung ausgezeichnet ist:

Sphaeroderma cyanescens sp. nov.

Breviter-ovatum, convexum, subtus piceum, antennis articulis 3 primis palpisque fulvis, supra cyaneum, nitidum, prothorace sublaevi, elytris subtiliter striato-punctatis.

Long. 2 mm.

JAVA ORIENTALES, Montes Tengger (*Frühstorfer*).

Die Fühler sind schlank und reichen bis hinter die Mitte der Flügeldecken, die 5 Endglieder sind unbedeutend verdickt. Der Thorax hat fast gradlinige, nach vorn wenig convergierende Seiten und ist ziemlich glatt, nur vor dem Hinterrande sind unter starker Vergrösserung einige Pünktchen zu bemerken. Die Flügeldecken sind mit regelmässigen feinen, einfachen Punktreihen versehen und haben in den Zwischenstreifen eine kaum bemerkbare Punktreihe; die beiden ersten Reihen an der Naht sind durch stärkere Punkte in den Zwischenstreifen gestört. Die Punkte der neunten Reihe werden vor der Mitte kräftig.

46. *Enneamera neglecta* sp. nov.

Rotundato-ovato, sat convexa, sordide testaceo-flava, nitida, capite, antennis (articulis 2 vel 3 primis testaceis exceptis), femoribus posticis apice, pectore et interdum abdomine nigris, tarsis infuscatis.

Long. 3.5-4 mm.

PALAWAN, Iwahig (C. M. Weber).

Type, No. 11988, in der Entomologischen Sammlung des Bureau of Science, Manila.

Kleiner, breiter gebaut als *E. thoracica*, grösser als *nigra*, der Kopf ist sparsam, der Thorax dichter und sehr fein punktiert, letzterer ausserdem mit feineren Punkten in den Zwischenräumen. Flügeldecken nicht dicht und sehr fein punktiert, die Zwischenräume äusserst dicht und fein punktuert.

47. *Botryonopa collaris* Ws., Ann. Soc. Ent. Belg. (1911), 75.

PALAWAN, Iwahig (12546, C. H. Lamb).

48. *Botryonopa bipunctata* Baly.

MINDORO, Magaran (11731, C. M. Weber).

49. *Anisodera thoracica* Chap.

MINDANAO, Zamboanga (13642, T. C. Zschokke).

50. *Callispa flavescens* Ws., Ann. Soc. Ent. Belg. (1911), 75.

LUZON, Rizal, Montalban Gorge (9270, W. Schultze).

51. *Bronthispa depressa* Baly.

LUZON, Manila (11902, Charles S. Banks).

52. *Promecotheca cumingi* Baly.

PALAWAN, Puerto Princesa (10775, W. Schultze).

53. *Promecotheca apicalis* Ws., Ann. Soc., Ent. Belg. (1911), 75.

TICAO ISLAND (7482, R. C. McGregor).

54. *Gonophora apicalis* Baly.

LUZON, Rizal, Montalban Gorge (5342, Charles S. Banks).

55. *Gonophora femorata* sp. nov.

Pallide fulva, subopaca, antennis, elytrorum apice extremo, femorum apice, tibiis tarsisque nigris, ventre rufo vel infuscato; elytris tricostatis, costa tertia obsoleta.

Long. 5 mm.

NEGROS OCCIDENTAL, Bago (1611, Charles S. Banks), PALAWAN, Bacuit (11678, C. M. Weber).

An der Färbung der Beine sofort zu erkennen. Letztere sind schwarz, die Vorderschenkel in der Basalhälfte, die übrigen,

namentlich auf der Unterseite, noch weiter rötlich gelb, ebenso sind die Fühler einfarbig schwarz und die äusserste Spitze der Flügeldecken ist schwärzlich. Die anderen Teile des Körpers sind blass rotgelb, der Bauch dunkler. Am meisten erinnert die Art an *G. fulva* Gest. von Sumatra, ist aber breiter gebaut und hat dickere Fühler. Thorax etwas breiter als lang, die gezähnelten Seiten an der Basis parallel, davor gerundet erweitert, vorn stärker verengt und nahe den Vorderecken eingeschnürt, die Scheibe gewölbt, uneben. Ausser der feinen Mittelrinne die in einem erhöhten Streifen liegt, bemerkt man noch die 4 gewöhnlichen Vertiefungen, welche mehr oder weniger zahlreich punktiert sind. Auf den Flügeldecken sind die beiden ersten Rippen kräftig, glänzend, die 3. ist schwach, undeutlich, zwischen die 3. und 4. Punktreihe schiebt sich vorn eine überzählige Reihe.

56. *Monochirus callicanthus* Bates.

LUZON, Manila (10550, *Charles S. Banks*).

57. *Monochirus moestus* Baly.

LUZON, Benguet, Bued River (9833, *H. M. Curran*).

58. *Dactylispa dimidiata* Gest.

BOHOL (6782, *A. Celestino*).

59. *Dactylispa infuscata* Chap.

MINDORO, Magaran (10768, *W. Schultze*).

60. *Dactylispa vittula* Chap.

CEBU, Danao (7560, *W. D. Smith*).

61. *Platypria ferruginea* sp. nov.

Subtus flavo-testacea, supra ferruginea subopaca, prothorace utrinque lobo elongato quinque-spinoso, elytris, bilobatis, lobo antico 5-spinoso, postico 3-spinoso, dorso striato-punctatis, bi-spinosis, humeris 4-spinosis.

Long. 5 mm.

MINDORO, Magaran (*C. M. Weber*).

Type, No. 13437, in der Entomologischen Sammlung des Bureau of Science, Manila.

In der Grösse und Bewaffnung der Seitenlappen des Körpers mit *P. longispina* Chap. übereinstimmend, aber durch die gleichmässig rostrote Farbe der Flügeldecken und deren Bedornung sehr verschieden. Am Seitenrande der Flügeldecken befinden sich zwischen den beiden Lappen 2 Dörnchen (selten einer), hinter dem zweiten Lappen 6 Dornen, von denen die beiden ersten mässig lang, die folgenden kürzer sind und nach der

Nahtecke hin kleiner werden. Die Schulter trägt 4 Dornen in einer Längsreihe, der letzte ist wenig höher aber bedeutend dicker als die vorhergehenden; auf der Scheibe stehen 2 dicke Dornen, der 1. vor der Mitte auf der ersten Rippe ist der stärkste von allen, der 2. hinter der Mitte auf der zweiten Rippe ist etwas kleiner als der 4. Schulterdorn. Ausserdem sind hinter der Mitte noch mehrere Dörnchen zu bemerken.

62. *Megapyga coeruleomaculata* Boh.

LUZON, Laguna, Los Baños (13083, E. M. Ledyard).

63. *Prioptera palawanica* sp. nov.

Subrotundata, convexa, testaceo-flava, nitida, antennarum articulo ultimo nigro, prothorace sublaevi, elytris subtiliter, hinc inde seriatim punctatis, antice retusis, gibbosis, disco antico fovea magna impressis, singulo maculis quatuor magnis nigris.

Long. 9–9.5 mm.

PALAWAN, Bacuit (C. M. Weber).

Type, No. 11786, in der Entomologischen Sammlung des Bureau of Science, Manila.

In die zweite Abteilung der Gattung gehörig^{*} und von *P. 4-impressa* Boh., mit der sie am nächsten verwandt ist, durch folgende Punkte zu unterscheiden: Der Körper ist in beiden Geschlechtern breiter gebaut, heller und mehr gelblich gefärbt, die Flügeldecken erweitern sich hinter der Basis nicht geradlinig und sehr schwach, sondern in leichtem Bogen bis hinter die Mitte und sind auf der Scheibe weniger uneben und merklich feiner punktiert. Insbesondere erhebt sich die Querleiste, welche das ansteigende Basaldreieck begrenzt, an der Naht zu einem niedrigen, stumpfen Höcker, die Grube hinter $\frac{1}{4}$ der Länge ist wenig grösser, aber viel flacher und die 2. Grube, schräg nach hinten und aussen von der ersten, ist nur noch angedeutet. Die zahlreichen und kräftigen Querrunzeln, welche die beiden ersten Punktreihen der *P. 4-impressa* durchsetzen, sind in der vorliegenden Art fast geschwunden und die Punktreihe zwischen der Scheibe und dem Seitendache ist nicht halb so kräftig; dafür sind

^{*} Ich teile *Prioptera* in 2 Abteilungen:

1. Die Wölbung der Thoraxscheibe setzt sich in der Mitte bis auf das Seitendach fort und teilt dies dadurch in einen grösseren, ausgebreiteten Teil vorn und einen grubenförmigen Teil hinten. Hierher gehören wenige Arten z. B. die Type der Gattung, *P. 8-punctata* Fabr. sowie *nigricollis* Ws.

2. Das Seitendach des Thorax ist gleichmässig ausgebreitet und bildet einen Längsstreifen mit ziemlich parallelen Rändern, der von der Scheibe der ganzen Länge nach durch einen bogenförmigen Längseindruck getrennt wird. Hierher gehört *P. westermanni* Bohn., und das Gross der Arten.

aber die 4 schwarzen Makeln jeder Decke bedeutend grösser. Die 3 ersten sind oval; die 1. nimmt die Grube und einen Teil davor ein, die 4. hinter der Mitte auf dem Seitendache ist quer und zieht ein Stück auf die Scheibe hinauf.

64. *Prioptera sinuata* Ol., ab. *deficiens* Ws.

Bei diesen Stücken fehlen die schwarzen Makeln 2 und 3 der Flügeldecken, während Makel 4 und namentlich 5 grösser als gewöhnlich sind.

65. *Aspidomorpha fraterna* Baly.

PALAWAN, Bacuit (11789, *C. M. Weber*).

66. *Aspidomorpha biradiata* Boh.

LUZON, Laguna, Calauang (14165, *R. C. McGregor*).

67. *Aspidomorpha bilobata* Boh.

LUZON, Laguna, Calauang (14179, *R. C. McGregor*).

68. *Aspidomorpha orbicularis* Boh.

SIBAY ISLAND (11409, *D. C. Worcester*).

69. *Aspidomorpha fusconotata* Boh.

In der Zahl, Grösse und Anordnung der braunen bis pech-schwarzen Makeln auf den Flügeldecken sehr veränderlich. Leicht falsch zu deuten scheint mir die Angabe von Boheman [Mon. Cassid. (1854), 2, 280], „der Nahthöcker ist mit einem kleinen schwärzlichen Ringe versehen.“ Dieser Ring ist fast immer vorhanden, besteht aber meist aus 2 Bogen unmittelbar hinter dem Höcker, wenn dieselben vorn geschlossen sind, reichen sie grade auf die höchste Stelle des Höckers.

LUZON, Bataan, Lamao (9795, *H. E. Stevens*); Cagayan Valley, Ilagan (9797, *H. E. Stevens*).

Hierher rechne ich auch 1 Exemplar von Luzon und eines von der Insel Dalupiri (11573, *D. C. Worcester* und *R. C. McGregor*), welche 2 dunkelbraune Seitenäste besitzen. Der 1. liegt dicht hinter dem Schulterrande, ist ziemlich breit und zuweilen nur hinten durch eine feine Linie mit der dunklen Zeichnung der Flügeldecken verbunden; der 2., hinter der Mitte, ist schmal.

70. ? *Mettriona westringi* Boh.

Die hierher gehörigen Arten sind durch Boheman oberflächlich beschrieben worden und noch heute nicht spezifisch zu unterscheiden, weil sich aus Mangel an reichlichem Materiale nicht nachweisen lässt, wie weit die Zahl und Grösse der gelben Reliefmakeln auf den Flügeldecken zu oder abnehmen kann.

Das typische Stück Boheman's soll 9 solcher Flecken auf jeder Flügeldecke haben, wovon einer an der Basis liegt.

LUZON, Bataan, Lamao (9796, *H. E. Stevens*).

PALAWAN, Bacuit (11793, *C. M. Weber*).

71. *Metriona recondita* Boh., Mon. Cassid. (1862), 4, 396.

MINDANAO, Agusan River (13688, *W. Schultze*).

COCCINELLIDÆ

1. *Chilocorus ruber* Ws.

PALAWAN, Bacuit (12328, *C. M. Weber*).

2. *Phaenochilus monostigma* sp. nov.

Oblongo-hemisphæricus, fulvus, nitidissimus, elytris ante medium macula communi, elliptica nigra.

Long. 4 mm.

MINDANAO, Agusan River (*W. Schultze*).

Type, No. 13686, in der Entomologischen Sammlung des Bureau of Science, Manila.

Länglich halbkugelig, hell rötlich gelb und oben stark glänzend, eine gemeinschaftliche gerundete Makel der Flügeldecken schwarz. Diese Makel ist länger als breit, beginnt unmittelbar hinter dem kleinen Schildchen und endet in der Mitte. Stirn länglich viereckig, nach unten wenig verengt, ziemlich dicht- und fein punktiert und kurz behaart, Augen unten in ein Dreieck verlängert, dessen Spitze abgerundet ist. Thorax stark quer, nach vorn zusammengedrückt, die schwach gerundeten, fast parallelen Seiten daher steil abfallend, nach vorn in einen dreieckigen, sparsam behaarten Zipfel verlängert, der bis zum unteren Augenrande reicht. Die Scheibe ist äusserst fein und nicht dicht punktiert. Die Flügeldecken sind hoch gewölbt und fallen gleichmässig bis an den abgeschrägten, nicht breit abgesetzten Seitenrand ab; sie sind sehr fein flach punktiert. In der äusseren Hälfte werden die Punkte grösser und tiefer, aber der Rand ist fast glatt. Die Bauchlinien bilden einen Viertelkreis, der vor dem Hinterrande des ersten Segmentes nach aussen läuft.

3. *Serangium spilotum* sp. nov.

Subhemisphaericum, testaceum, prothorace (limbo laterali interdum excepto), scutello elytrisque nigris, nitidis, his in singulo macula elongata, sublunata, rufa.

Long. 2.5 mm.

LUZON, Manila (*G. Compere*).

Type, No. 10244, in der Entomologischen Sammlung des Bureau of Science, Manila.

Kopf kurz und breit, rötlich gelbbraun, glänzend, die Stirn von der Mitte der Augen bis zum Vorderrande mit einem breiten, halb aufstehenden gelben Haarbüschel besetzt. Thorax $2\frac{1}{3}$ mal so breit als in der Mittellinie lang, schwarz, an den Seiten zuweilen rötlich gelbbraun gesäumt, nicht dicht, in der Mitte feiner und sparsamer als an den Seiten punktiert, jeder Punkt mit einem aufgerichteten weisslichen Härchen besetzt. Schildchen dreieckig, glatt. Flügeldecken unter starker Vergrösserung kaum sichtbar punktiert, nahe dem Seitenrande mit einer vorn unregelmässig verdoppelten stärkeren Punktreihe, in welcher in jedem Punkte ein weissliches, nach aussen gerichtetes Härchen entspringt. Die rote Längsmakel jeder Decke reicht ungefähr von $\frac{1}{4}$ bis $\frac{2}{3}$ der Länge und hat eine annähernd mondförmige Gestalt; ihr Innenrand liegt nahe der Naht und läuft dieser parallel, der Aussenrand ist ähnlich wie der Seitenrand gebogen. Die Unterseite ist dunkel rötlich gelbbraun, mit helleren Beinen; der vorgezogene Teil des Prosternum ist angedunkelt.

4. *Pullus brunescens* Motsch.

LUZON, Benguet, Twin Peaks (8197, *Charles S. Banks*).